LPDES PERMIT NO. LA0006181, AI No. 2082

LPDES FACT SHEET and RATIONALE
FOR THE DRAFT LOUISIANA POLLUTANT DISCHARGE ELIMINATION SYSTEM
(LPDES) PERMIT TO DISCHARGE TO WATERS OF LOUISIANA

I. Company/Facility Name: Honeywell International Inc.
Geismar Plant
Post Office Box 226
Geismar, LA 70734

II. Issuing Office: Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services
Post Office Box 4313
Baton Rouge, Louisiana 70821-4313

III. Prepared By: Jenniffer Sheppard
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Date Prepared: October 29, 2007

IV. Permit Action/Status:

A. Reason For Permit Action:

Proposed reissuance of an Louisiana Pollutant Discharge Elimination System (LPDES) permit for a 5-year term following regulations promulgated at LAC 33:IX.2711/40 CFR 122.46.

* In order to ease the transition from NPDES to LPDES permits, dual regulatory references are provided where applicable. The LAC references are the legal references while the 40 CFR references are presented for informational purposes only. In most cases, LAC language is based on and is identical to the 40 CFR language. 40 CFR Parts 401, 405-415 and 417-471 have been adopted by reference at LAC 33:IX.4903 and will not have dual references. In addition, state standards (LAC 33:IX Chapter 11) will not have dual references.

LAC 33:IX Citations: Unless otherwise stated, citations to LAC 33:IX refer to promulgated regulations listed at Louisiana Administrative Code, Title 33, Part IX.

40 CFR Citations: Unless otherwise stated, citations to 40 CFR refer to promulgated regulations listed at Title 40, Code of Federal Regulations in accordance with the dates specified at LAC 33:IX.4901, 4903, and 2301.F.

B. NPDES permit - NPDES permit effective date: N/A
NPDES permit expiration date: N/A
EPA has not retained enforcement authority.

C. LPDES permit - LPDES permit effective date: July 12, 2002
LPDES permit expiration date: July 11, 2007
LPDES permit minor modification effective date: April 1, 2006

D. Application received on January 12, 2007. Additional information received on October 31, 2007. Additional Information received via e-mail on November 5, 2007.

V. Facility Information:

A. Location - 5525 Highway 3115 in Geismar

B. Applicant Activity -

According to the application, Honeywell International Inc., Geismar Plant, is a chemical manufacturing facility which produces hydrogen fluoride, fluorocarbon products, and fluoropolymer products.

C. Technology Basis - (40 CFR Chapter 1, Subchapter N/Parts 401, 405-415 and 417-471 have been adopted by reference at LAC 33:IX.4903)

Guideline	Reference
Organic Chemicals, Plastics, and Synthetic Fibers Process Flow - 0.6042 MGD	40 CFR 414 Subparts D, G, and J
Inorganic Chemicals- Hydrochloric Acid Production Subcategory Daily Production - 385,248,000 lbs/year 1055473.976 lbs/day	40 CFR 415 Subpart H

Other sources of technology based limits:
LDEQ Stormwater Guidance, letter dated 6/17/87, from J. Dale Givens (LDEQ) to Myron Knudson (EPA Region 6).
Louisiana Water Quality Management Plan for Sanitary Dischargers.
LDEQ Sanitary General Permits
Best Professional Judgement

D. Fee Rate -
1. Fee Rating Facility Type: major
2. Complexity Type: VI
3. Wastewater Type: II
4. SIC code: 2819 and 2869

E. Continuous Facility Effluent Flow - 3.121204 MGD.

VI. Receiving Waters: Mississippi River

1. TSS (15%), mg/L: 32
2. Average Hardness, mg/L $CaCO_3$: 153.3
3. Critical Flow, cfs: 141,955
4. Mixing Zone Fraction: 0.3333
5. Harmonic Mean Flow, cfs: 366,784
6. River Basin: Mississippi River, Segment No. 070301

7. Designated Uses:

The designated uses are primary contact recreation, secondary contact recreation, fish and wildlife propagation, and drinking water supply.

Information based on the following: Water Quality Management Plan; LAC 33:IX Chapter 11;/Recommendation(s) from the Engineering Section. Hardness and 15% TSS data come from monitoring station #319 on the Mississippi River at Plaquemine Ferry Landing in St. Francisville, listed in Hardness and TSS Data for All LDEQ Ambient Stations for the Period of Record as of March 1998, LeBlanc. This information was submitted in a memorandum from Will Barlett to Jenniffer Sheppard dated March 12, 2007.

VII. Outfall Information:

Outfall 001

A. Type of wastewater - the discharge of treated process wastewater, process area stormwater, and general use wastewater from the MultiProducts Plant, the Aclon Plant, the HFC - 125/245fa Plants; process scrubber and thermal oxidizer scrubber wastewater; utility wastewaters including cooling tower blowdown, boiler blowdown, softener regeneration water, reject/backwash/regen water; and other miscellaneous non-process wastewater discharges.

B. Location - at the point of discharge to the Mississippi River from the wastewater treatment facility north of the fluorocarbon waste treatment area and adjacent to the southern bank of the stormwater retention pond, and prior to co-mingling with the non-process area stormwater from Outfall 004, at Latitude 30°13'00", Longitude 91°03'00".

C. Treatment - treatment of MultiProducts and HFC 125/245fa process wastewaters, general use wastewater, cooling tower blowdown, and potentially contaminated stormwater consists of:

- air stripping
- carbon adsorption
- flocculation
- chemical precipitation
- neutralization

Treatment - treatment of MultiProducts and HFC 125/245fa utility wastewaters consists of:

- flocculation
- chemical precipitation
- neutralization

Treatment - treatment of Alcon Plant process, cooling tower blowdown, process scrubber and thermal oxidizer wastewater, stormwater, and non-process wastewaters consists of:

- equalization
- neutralization
- filtration

D. Flow - Continuous Flow 0.890224 MGD.

Process Wastewater*	0.604200 MGD
Utility Wastewater*	0.264024 MGD
Miscellaneous Wastewater*	0.022000 MGD

* Specific component waste streams are defined at Appendix A-1 and Appendix E.

E. Receiving waters - Mississippi River via an effluent pipe.

F. Basin and segment - Mississippi River Basin, Segment 070301.

Outfall 002

A. Type of wastewater - the discharge of treated process wastewater, process area stormwater, and general use wastewater associated with the hydrogen fluoride (HF) facility; process scrubber wastewater; cooling tower blowdown; boiler blowdown; equipment seal water; wastewater from Flurogypsum slurry pump tanks which includes flow from the HF facility furnaces and emergency scrubbers; stormwater from the fluorogypsum stacking areas; and miscellaneous and other non-process wastewaters which discharge to the Mississippi River.

B. Location - at the point of discharge from the southern part of the facility, next to the HF lime treatment facility, after the commingling of all contributing streams, at Latitude 30°12'56", Longitude 91°03'11".

C. Treatment - treatment of process, utility wastewaters, and stormwater runoff consists of:
- chemical precipitation
- neutralization
- flocculation

D. Flow - Continuous Flow 2.208980 MGD.

Process Wastewater*	0.830440 MGD
Cooling Tower Wastewater*	0.093580 MGD
Flurogypsum Slurry Pump Tank*	0.444000 MGD
Stormwater*	1.008000 MGD
Recycled Wastewater*	-0.167040 MGD

* Specific component waste streams are defined at Appendix A-2 and Appendix E.

E. Receiving waters - Mississippi River via an effluent pipe.

F. Basin and segment - Mississippi River Basin, Segment 070301.

Outfall 003

A. Type of wastewater - the discharge of underflow associated with the raw river water intake clarification system which discharges to the Mississippi River.

B. Location - at the point of discharge of the southern end of the facility next to the clarifier units and prior to combining with any other waters, at Latitude 30°13'18", Longitude 91°03'08".

C. Treatment - none

D. Flow - Continuous, (Max 30-Day) 0.030 MGD.

E. Receiving waters - Mississippi River via an effluent pipe.

F. Basin and segment - Mississippi River Basin, Segment 070301.

Outfall 004

A. Type of wastewater - the discharge of non-process area stormwater.

B. Location - at the point of discharge from the stormwater retention pond prior to commingling with the process wastewaters of Outfall 001, at Latitude 30°13'00", Longitude 91°03'00".

C. Treatment - None

D. Flow - Intermittent

E. Receiving waters - Mississippi River via an effluent pipe.

F. Basin and segment - Mississippi River Basin, Segment 070301.

Outfall 005

A. Type of wastewater - the discharge of treated sanitary wastewater.

B. Location - at the point where the package treatment plant's pipe discharges to the Gulf States Ditch prior to commingling with any other waters, at Latitude 30°13'43", Longitude 91°03'06".

C. Treatment - treatment of sanitary wastewaters consists of:
- package treatment plant
  -settling
  -disinfection

D. Flow - Intermittent (Estimated Flow) 0.060 MGD.

E. Receiving waters - Mississippi River via the Gulf States Ditch

F. Basin and segment - Mississippi River Basin, Segment 070301

VIII. Proposed Permit Limits:

The specific effluent limitations and/or conditions will be found in the draft permit. Development and calculation of permit limits are detailed in the Permit Limit Rationale section below.

Summary of Proposed Changes From the Current LPDES Permit:

A. Outfall 001 - limitations have increased based on an increase in process flow from 0.5924 MGD to 0.6042 MGD. Effluent limitations have been calculated in accordance with the OCPSF Guidelines at 40 CFR Part 414, Subparts D, G, and J.

B. Outfall 001 - Honeywell has requested a monitoring frequency reduction for Trichloroethylene from 1/month to 1/6 months. This request has been granted in accordance with the USEPA Memorandum "Interim Guidance for Performance-Based Reductions of NPDES Permit Monitoring Frequencies."

C. Outfall 002 - Total Chromium has been deleted as a parameter from this outfall. According to Honeywell, the process that produced the chromium in this discharge has been discontinued. A DMR review was done to verify the presence of Total Chromium in the discharge. Of the 67 DMR results reported during the current permit cycle, the average values were 0.176 lbs/day monthly average and 0.534 lbs/day daily maximum, which is 16% of the monthly average limitation of 1.1 lbs/day and 14.8% of the daily maximum of 3.6 lbs/day. A water quality screen was also performed using the effluent limitations from Outfall 001 and the current limitations for Outfall 002 (See Appendix B-2). The water quality screen for Total Chromium was negative, indicating that a water quality limitation for this parameter is not necessary. Therefore, based on the fact that the process generating chromium in the discharge has been discontinued and the low concentration detected in the discharge for the past 67 DMRs, LDEQ has determined that monitoring is no longer necessary for this parameter.

IX. Permit Limit Rationale:

The following section sets forth the principal facts and the significant factual, legal, methodological, and policy questions considered in preparing the draft permit. Also set forth are any calculations or other explanations of the derivation of specific effluent limitations and conditions, including a citation to the applicable effluent limitation guideline or performance standard provisions as required under LAC 33:IX.2707/40 CFR Part 122.44 and reasons why they are applicable or an explanation of how the alternate effluent limitations were developed.

A. <u>TECHNOLOGY-BASED VERSUS WATER QUALITY STANDARDS-BASED EFFLUENT LIMITATIONS AND CONDITIONS</u>

Following regulations promulgated at LAC 33:IX.2707.L.2.b/40 CFR Part 122.44(l)(2)(ii), the draft permit limits are based on either technology-based effluent limits pursuant to LAC 33:IX.2707.A/40 CFR Part 122.44(a) or on State water quality standards and requirements pursuant to LAC 33:IX.2707.D/40 CFR Part 122.44(d), whichever are more stringent.

B. TECHNOLOGY-BASED EFFLUENT LIMITATIONS AND CONDITIONS

Regulations promulgated at LAC 33:IX.2707.A/40 CFR Part 122.44(a) require technology-based effluent limitations to be placed in LPDES permits based on effluent limitations guidelines where applicable, on BPJ (best professional judgement) in the absence of guidelines, or on a combination of the two. The following is a rationale for types of wastewaters. See outfall information descriptions for associated outfall(s) in Section VII.

1. Outfall 001 and 002 - Process Wastewaters

***Outfall 001** -the discharge of treated process wastewater, process area stormwater, and general use wastewater from the MultiProducts Plant, the Aclon Plant, the HFC -125/245fa Plants; process scrubber and thermal oxidizer scrubber wastewater; utility wastewaters including cooling tower blowdown, boiler blowdown, softener regeneration water, reject/backwash/regen water; and other miscellaneous non-process wastewater discharges.

Honeywell International Inc., Geismar Plant is subject to Best Practicable Control Technology Currently Available (BPT) and Best Available Technology Economically Achievable (BAT) effluent limitation guidelines listed below:

Manufacturing Operation	Guideline
Organic chemical manufacturing	40 CFR 414, Subpart(s) D, G, and J.

PARAMETER	**MONTHLY AVERAGE LBS/DAY**	**DAILY MAXIMUM LBS/DAY**
Flow (MGD)	Report	Report (continuous recording)
pH (standard units)	6.0	9.0 (continuous recording)
BOD_5	210	569
TSS	358	1161
Total Fluoride	166.29	332.58
Total Chromium	5.59	13.96
Acrylonitrile	0.47	1.17
Benzene	0.29	0.68
Carbon Tetrachloride	0.72	1.91
Chlorobenzene	0.72	1.91
Chloroethane	0.55	1.49

PARAMETER	MONTHLY AVERAGE LBS/DAY	DAILY MAXIMUM LBS/DAY
Chloroform	0.56	1.64
1,1-Dichloroethane	0.11	0.30
1,2-Dichloroethane	0.91	2.89
1,1-Dichloroethylene	0.11	0.30
1,2-trans-Dichloroethylene	0.13	0.33
1,2-Dichloropropane	0.99	4.00
1,3-Dichloropropylene	0.99	4.00
Ethylbenzene	0.72	1.91
Methyl Chloride	0.55	1.49
Methylene Chloride	0.18	0.86
Tetrachloroethylene	0.26	0.83
Toluene	0.14	0.37
1,1,1-Trichloroethane	0.11	0.30
1,1,2-Trichloroethane	0.16	0.64
Trichloroethylene	0.13	0.35
Vinyl Chloride	0.49	0.87
2,4-Dimethylphenol	0.10	0.24
4,6-Dinitro-o-cresol	0.39	1.40
2,4-Dinitrophenol	6.08	21.62
2-Nitrophenol	0.33	1.16
4-Nitrophenol	0.82	2.90
Phenol	0.10	0.24
Acenaphthene	0.10	0.24
Acenaphthylene	0.10	0.24
Anthracene	0.10	0.24
Benzo(a)anthracene	0.10	0.24

PARAMETER	MONTHLY AVERAGE LBS/DAY	DAILY MAXIMUM LBS/DAY
Benzo(a)pyrene	0.10	0.24
3,4-Benzofluoranthene	0.10	0.24
Benzo(k)fluoranthene	0.10	0.24
Bis(2-ethylhexyl)phthalate	0.48	1.30
Chrysene	0.10	0.24
1,2-Dichlorobenzene	0.99	4.00
1,3-Dichlorobenzene	0.72	1.91
1,4-Dichlorobenzene	0.72	1.91
Diethyl phthalate	0.23	0.57
Dimethyl phthalate	0.10	0.24
Di-n-butyl phthalate	0.10	0.22
Fluoranthene	0.11	0.27
Fluorene	0.10	0.24
Hexachlorobenzene(*1)	0.49	1.18
Hexachlorobutadiene	0.72	1.91
Hexachloroethane	0.99	4.00
Naphthalene	0.10	0.24
Nitrobenzene	11.27	32.26
Phenanthrene	0.10	0.24
Pyrene	0.10	0.24
1,2,4-Trichlorobenzene	0.99	4.00

(*1) The Monthly Average and Daily Maximum Values listed are water quality based limitations.

Calculations and basis of permit limitations are found at Appendix A-1 and associated appendices. See below for site-specific considerations.

Site-Specific Consideration(s)

Flow - established in accordance with LAC 33:IX.2707.I.1.b. This requirement has been retained from the current LPDES permit, effective on July 12, 2002.

PH - established in accordance with LAC 33:IX.1113.C.1. This requirement has been retained from the current LPDES permit, effective on July 12, 2002.

Total Fluoride - limitations are based on the concentrations in Table 12-25 of the Inorganic Chemicals Development Document (ICDD), EPA 440/1-79-007, June 1980, Hydrofluoric Acid Subcategory. These limitations were initially established in the NPDES permit for the Honeywell-Baton Rouge Facility (LA0000329, AI 289), effective date April 1, 1994, and are now considered BAT for this facility as well.

Total Chromium -Limitations were established in accordance with the OCPSF Guidelines under 40 CFR Part 414, Subparts D, G and J for metal bearing waste streams. The flow used for this calculation is 0.6042 MGD (See Appendix A-1).

Hexachlorobenzene - Water Quality limited parameter. See Appendix B-2.

BOD_5, TSS, Acrylonitrile, Benzene, Carbon Tetrachloride, Chlorobenzene, Chloroethane, Chloroform, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethylene, 1,2-trans-Dichloroethylene, 1,2-Dichloropropane, 1,3-Dichloropropylene, Ethylbenzene, Methyl Chloride, Methylene Chloride, Tetrachloroethylene, Toluene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, Trichloroethylene, Vinyl Chloride, 2,4-Dimethylphenol, 4,6-Dinitro-o-cresol, 2,4-Dinitrophenol, 2-Nitrophenol, 4-Nitrophenol, Phenol, Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)anthracene, Benzo(a)pyrene, 3,4-Benzofluoranthene, Benzo(k)fluoranthene, Bis(2-ethylhexyl)phthalate, Chrysene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Diethyl phthalate, Dimethyl phthalate, Di-n-butyl phthalate, Fluoranthene, Fluorene, Hexachlorobutadiene, Hexachloroethane, Naphthalene, Nitrobenzene, Phenanthrene, Pyrene, 1,2,4-Trichlorobenzene - limitations established in accordance with OCPSF Guidelines under 40 CFR 414, Subparts D, G, and J for the Thermoplastic Resins Subcategory and the Bulk Organic Chemicals Subcategory and based on the process discharge of 0.6042 MGD.

***Outfall 002** - the discharge of treated process wastewater, process area stormwater, and general use wastewater associated with the hydrogen fluoride (HF) facility; process scrubber wastewater; cooling tower blowdown; boiler blowdown; equipment seal water; wastewater from Flurogypsum slurry pump tanks which includes flow from the HF facility furnaces and emergency scrubbers; stormwater from the fluorogypsum stacking areas; and miscellaneous and other non-process wastewaters which discharge to the Mississippi River.

Honeywell International Inc., Geismar Plant is subject to Best Practicable Control Technology Currently Available (BPT) and Best Available Technology Economically Achievable (BAT) effluent limitation guidelines listed below:

Manufacturing Operation	Guideline
Inorganic chemical manufacturing	
Hydrochloric Acid Production Subcategory	40 CFR 415
Daily Production - 385,248,000 lbs/year	Subpart H
1055473.976 lbs/day	

PARAMETER	**MONTHLY AVERAGE LBS/DAY**	**DAILY MAXIMUM LBS/DAY**
Flow (MGD)	Report	Report (continuous recording)
pH (standard units)	6.0	9.0 (continuous recording)
TSS	5594	11610
Total Fluoride	1689	3589
Total Nickel	6.3	21.1
Total Zinc	23.2	76.0

Site-Specific Consideration(s)

Flow - established in accordance with LAC 33:IX.2707.I.1.b. This requirement has been retained from the current LPDES permit, effective on July 12, 2002.

PH - established in accordance with LAC 33:IX.1113.C.1. This requirement has been retained from the current LPDES permit, effective on July 12, 2002.

TSS, Total Fluoride, Total Nickel, and Total Zinc - limitations established in accordance with the Inorganic Chemicals Point Source Guidelines under 40 CFR 415, Subpart H for the Hydrofluoric Acid Production Subcategory and based on the daily production of 1055473.976 lbs/day (See Appendix A-2).

2. Outfall 003 - Utility Wastewaters

***Outfall 003** - the discharge of underflow associated with the raw river water intake clarification system which discharges to the Mississippi River.

Utility wastewaters being discharged to discrete outfalls receive BPJ limitations/monitoring requirements according to the following schedule:

PARAMETER	**MONTHLY AVERAGE LBS/DAY**	**DAILY MAXIMUM LBS/DAY**
Flow (MGD)	Report	Report

Site-Specific Consideration(s)

Flow - established in accordance with LAC 33:IX.2707.I.1.b. This requirement has been retained from the current LPDES permit, effective on July 12, 2002.

Coagulants - inventory calculation shall be recorded (quantity and type) and retained for a period of three years. This requirement has been retained from the current LPDES permit, effective on July 12, 2002.

3. Outfall(s) 004 - Stormwater

***Outfall 004** - the discharge of non-process area stormwater.

Uncontaminated or low potential contaminated stormwater discharged through discrete outfall(s) not associated with process wastewater shall receive the following BPJ limitations in accordance with this Office's guidance on stormwater, letter dated 6/17/87, from J. Dale Givens (LDEQ) to Myron Knudson (EPA Region 6).

PARAMETER	MONTHLY AVERAGE MG/L	DAILY MAXIMUM MG/L
Flow (MGD)	Report	Report
TOC	---	50
Oil & Grease	---	15
pH (standard units)	6.0	9.0

Site-Specific Consideration(s)

Flow - established in accordance with LAC 33:IX.2707.I.1.b. This requirement has been retained from the current LPDES permit, effective on July 12, 2002.

PH - established in accordance with LAC 33:IX.1113.C.1. This requirement has been retained from the current LPDES permit, effective on July 12, 2002.

TOC and Oil & Grease - limitations established in accordance with current stormwater guidance, the MSGP for Industrial Stormwater Discharges (LAR050000), similarly permitted facilities, and Best Professional Judgment. These requirements have been retained from the current LPDES permit, effective on July 12, 2002.

In accordance with LAC 33:IX.2707.I.3 and [40 CFR 122.44(I)(3) and (4)], a Part II condition is proposed for applicability to all storm water discharges from the facility, either through permitted outfalls or through outfalls which are not listed in the permit or as sheet flow. The Part II condition requires a Storm Water Pollution Prevention Plan (SWP3) within six (6) months of the effective date of the final permit, along with other requirements. If the permittee maintains other plans that contain duplicative information, those plans could be incorporated by reference to the SWP3. Examples of these type plans include, but are not limited to: Spill

Prevention Control and Countermeasures Plan (SPCC), Best Management Plan (BMP), Response Plans, etc. The conditions will be found in the draft permit. Including Best Management Practice (BMP) controls in the form of a SWP3 is consistent with other LPDES and EPA permits regulating similar discharges of stormwater associated with industrial activity, as defined in LAC 33:IX.2522.B.14 [40 CFR 122.26(b)(14)].

4. Outfall 005 - Sanitary Wastewaters

***Outfall 005** - the discharge of treated sanitary wastewater.

Sanitary wastewaters (internal or external) are regulated in accordance with LAC 33:IX.711 or 709.B, by BPJ utilizing the sanitary general permits issued by this Office, and the Louisiana Water Quality Management Plan, Appendices A (Areawide Sanitary Effluent Limits Policy) and B (Statewide Sanitary Effluent Limits Policy), as applicable. Concentration limits are used in accordance with LAC 33:IX.2707.F.1.b which states that mass limitations are not necessary when applicable standards and limitations are expressed in other units of measurement. LAC 33:IX.709.B references LAC 33:IX.711 which express BOD_5 and TSS in terms of concentration.

According to the Statewide Sanitary Effluent Limitations Policy, dischargers to the Mississippi River shall receive limitations equivalent to secondary treatment.

PARAMETER	**MONTHLY AVERAGE MG/L**	**WEEKLY AVERAGE MG/L**
Flow (MGD)	Report	Report
BOD_5	30	45
TSS	30	45
Fecal Coliform colonies/100 ml	200	400
pH (standard units)	6.0	9.0

Site-Specific Consideration(s)

Flow - established in accordance with LAC 33:IX.2707.I.1.b. This requirement has been retained from the current LPDES permit, effective on July 12, 2002.

PH - established in accordance with LAC 33:IX.1113.C.1. This requirement has been retained from the current LPDES permit, effective on July 12, 2002.

BOD_5, TSS, and Fecal Coliform - limitations are established in accordance with the Statewide Sanitary Effluent Limitations Policy. These requirements have been retained from the current LPDES permit, effective on July 12, 2002.

C. WATER QUALITY-BASED EFFLUENT LIMITATIONS

Technology-based effluent limitations and/or specific analytical results from the permittee's application were screened against state water quality numerical standard based limits by following guidance procedures established in the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001. Calculations, results, and documentation are given in Appendix B.

In accordance with LAC 33:IX.2707.D.1/40 CFR § 122.44(d)(1), the existing (or potential) discharge (s) was evaluated in accordance with the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001, to determine whether pollutants would be discharged "at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard." Calculations, results, and documentation are given in Appendix B.

The following pollutants received water quality based effluent limits:

POLLUTANT(S)
Hexachlorobenzene

Minimum quantification levels (MQL's) for state water quality numerical standards-based effluent limitations are set at the values listed in the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001. They are also listed in Part II of the permit.

TMDL Waterbodies

Outfalls 001, 002, 003, 004, and 005

The process wastewater, process area stormwater, and general use wastewater from the MultiProducts Plant, the Aclon Plant, the HFC -125/245fa Plants; process scrubber and thermal oxidizer scrubber wastewater; utility wastewaters including cooling tower blowdown, boiler blowdown, softener regeneration water, reject/backwash/regen water; and other miscellaneous non-process wastewater discharges **(Outfall 001)**, HF Plant process wastewater, process area stormwater, and general use wastewater; scrubber water; boiler blowdown; equipment seal water; cooling water; slurry pump tanks wastewater; and stormwater from the flurogypsum stacking area **(Outfall 002)**, clarifier underflow **(Outfall 003)**, and non-process area stormwater **(Outfall 004)** to the Mississippi River via effluent pipe, and sanitary wastewater **(Outfall 005)** to the Mississippi River via the Gulf States Ditch, Segment No. 070301. The Mississippi River is not listed on the 303(d) report as being impaired. Therefore, no additional requirements have been established in this permit.

Monitoring frequencies for water quality based limited parameters are established in accordance with the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001.

Site-Specific Consideration(s)

None

D. Biomonitoring Requirements

It has been determined that there may be pollutants present in the effluent which may have the potential to cause toxic conditions in the receiving stream. The State of Louisiana has established a narrative criteria which states, "toxic substances shall not be present in quantities that alone or in combination will be toxic to plant or animal life." The Office of Environmental Services requires the use of the most recent EPA biomonitoring protocols.

Whole effluent biomonitoring is the most direct measure of potential toxicity which incorporates both the effects of synergism of effluent components and receiving stream water quality characteristics. Biomonitoring of the effluent is, therefore, required as a condition of this permit to assess potential toxicity. The biomonitoring procedures stipulated as a condition of this permit for Outfall(s) 001 and 002 are as follows:

TOXICITY TESTS	FREQUENCY
Acute static renewal 48-hour definitive toxicity test using Daphnia pulex	1/year
Acute static renewal 48-hour definitive toxicity test using fathead minnow (Pimephales promelas)	1/year

Toxicity tests shall be performed in accordance with protocols described in the latest revision of the "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms." The stipulated test species are appropriate to measure the toxicity of the effluent consistent with the requirements of the State water quality standards. The biomonitoring frequency has been established to reflect the likelihood of ambient toxicity and to provide data representative of the toxic potential of the facility's discharge in accordance with regulations promulgated at LAC 33:IX.2715/40 CFR Part 122.48.

Results of all dilutions as well as the associated chemical monitoring of pH, temperature, hardness, dissolved oxygen, conductivity, and alkalinity shall be documented in a full report according to the test method publication mentioned in the previous paragraph. The permittee shall submit a copy of the first full report to the Office of Environmental Compliance. The full report and subsequent reports are to be retained for three (3) years following the provisions of Part III.C.3 of this permit. The permit requires the submission

of certain toxicity testing information as an attachment to the Discharge Monitoring Report.

This permit may be reopened to require effluent limits, additional testing, and/or other appropriate actions to address toxicity if biomonitoring data show actual or potential ambient toxicity to be the result of the permittee's discharge to the receiving stream or water body. Modification or revocation of the permit is subject to the provisions of LAC 33:IX.3105/40 CFR 124.5. Accelerated or intensified toxicity testing may be required in accordance with Section 308 of the Clean Water Act.

Dilution Series

The permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests. These additional effluent concentrations shall be 0.04%, 0.06%, 0.08%, 0.10%, and 0.14%. The low-flow effluent concentration (critical dilution) is defined as 0.10% effluent.

E. MONITORING FREQUENCIES

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity [LAC 33:IX.2715/40 CFR 122.48(b)] and to assure compliance with permit limitations [LAC 33:IX.2707.I./40 CFR 122.44(I)]. The following section(s) explain the rationale for the monitoring frequencies stated in the draft permit.

1. Outfalls 001 and 002 - Process Wastewaters

***Outfall 001** -the discharge of treated process wastewater, process area stormwater, and general use wastewater from the MultiProducts Plant, the Aclon Plant, the HFC -125/245fa Plants; process scrubber and thermal oxidizer scrubber wastewater; utility wastewaters including cooling tower blowdown, boiler blowdown, softener regeneration water, reject/backwash/regen water; and other miscellaneous non-process wastewater discharges.

Flow and pH shall be monitored continuously. This frequency has been retained from the current LPDES permit, effective on July 12, 2002.

PARAMETER(S)	MONITORING FREQUENCY
Flow	Continuous
pH	Continuous

BOD_5, TSS, Total Fluoride, and Total Chromium - the monitoring frequency of 3/week is established for pollutants being discharged at levels less than the draft permit mass limits, but still being discharged at significant levels. This frequency has been retained from the current LPDES permit, effective on July 12, 2002.

PARAMETER(S)	MONITORING FREQUENCY
BOD_5	3/week
TSS	3/week
Total Fluoride	3/week
Total Chromium	3/week

Trichloroethylene - Honeywell has requested a monitoring frequency reduction from 1/month to 1/ 6 months. This request has been granted in accordance with the USEPA Memorandum "Interim Guidance for Performance-Based Reductions of NPDES Permit Monitoring Frequencies." Therefore, those toxic pollutants indicated as being discharged well below the proposed draft permit limits are proposed to monitored 1/ 6 months.

PARAMETER(S)	MONITORING FREQUENCY
Trichloroethylene	1/6 months

Acrylonitrile, Benzene, Carbon Tetrachloride, Chlorobenzene, Chloroethane, Chloroform, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethylene, 1,2-trans-Dichloroethylene, 1,2-Dichloropropane, 1,3-Dichloropropylyene, Ethylbenzene, Methyl Chloride, Methylene Chloride, Tetrachloroethylene, Toluene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, Vinyl Chloride, 2,4-Dimethylphenol, 4,6-Dinitro-o-Cresol, 2,4-Dinitrophenol, 2-Nitrophenol, 4-Nitrophenol, Phenol, Acenaphthene, Acenaphthylene, Anthracene, Benzo (a) anthracene, Benzo (a) pyrene, 3,4-Benzofluoranthene, Benzo(k)fluoranthene, Bis(2-ethylhexyl)phthalate, Chrysene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Diethyl phthalate, Dimethyl phthalate, Di-n-butyl phthalate, Fluoranthene, Fluorene, Hexachlorobenzene, Hexachlorobutadiene, Hexachloroethane, Naphthalene, Nitrobenzene, Phenanthrene, Pyrene, and 1,2,4-Trichlorobenzene - Toxic pollutants not expected to be on-site are proposed to be monitored once per year. These monitoring frequencies were retained from the current LPDES permit, effective on July 12, 2002.

PARAMETER(S)	**MONITORING FREQUENCY**
Acrylonitrile	1/year
Benzene	1/year
Carbon Tetrachloride	1/year
Chlorobenzene	1/year
Chloroethane	1/year
Chloroform	1/year
1,1-Dichloroethane	1/year
1,2-Dichloroethane	1/year
1,1-Dichloroethylene	1/year
1,2-trans-Dichloroethylene	1/year
1,2-Dichloropropane	1/year
1,3-Dichloropropylene	1/year
Ethylbenzene	1/year
Methyl Chloride	1/year
Methylene Chloride	1/year
Tetrachloroethylene	1/year
Toluene	1/year
1,1,1-Trichloroethane	1/year
1,1,2-Trichloroethane	1/year
Vinyl Chloride	1/year
2,4-Dimethylphenol	1/year
4,6-Dinitro-o-cresol	1/year
2,4-Dinitrophenol	1/year
2-Nitrophenol	1/year
4-Nitrophenol	1/year
Phenol	1/year
Acenaphthene	1/year

PARAMETER(S)	**MONITORING FREQUENCY**
Acenaphthylene	1/year
Anthracene	1/year
Benzo (a) anthracene	1/year
Benzo (a) pyrene	1/year
3,4-Benzofluoranthene	1/year
Benzo(k)fluoranthene	1/year
Bis(2-ethylhexyl)phthalate	1/year
Chrysene	1/year
1,2-Dichlorobenzene	1/year
1,3-Dichlorobenzene	1/year
1,4-Dichlorobenzene	1/year
Diethyl phthalate	1/year
Dimethyl phthalate	1/year
Di-n-butyl phthalate	1/year
Fluoranthene	1/year
Fluorene	1/year
Hexachlorobenzene	1/year
Hexachlorobutadiene	1/year
Hexachloroethane	1/year
Naphthalene	1/year
Nitrobenzene	1/year
Phenanthrene	1/year
Pyrene	1/year
1,2,4-Trichlorobenzene	1/year

***Outfall 002** - the discharge of treated process wastewater, process area stormwater, and general use wastewater associated with the hydrogen fluoride (HF) facility; process scrubber wastewater; cooling tower blowdown; boiler blowdown; equipment seal water; wastewater from Flurogypsum slurry pump tanks which includes flow from the HF facility furnaces and emergency scrubbers; stormwater from the fluorogypsum stacking areas; and miscellaneous and other non-process wastewaters which discharge to the Mississippi River.

Flow and pH shall be monitored continuously. This frequency has been retained from the current LPDES permit, effective on July 12, 2002.

PARAMETER(S)	**MONITORING FREQUENCY**
Flow	Continuous
pH	Continuous

TSS, Total Fluoride, Total Nickel, and Total Zinc - the monitoring frequency of 3/week is established for pollutants being discharged at levels less than the draft permit mass limits, but still being discharged at significant levels. This frequency has been retained from the current LPDES permit, effective on July 12, 2002.

PARAMETER(S)	**MONITORING FREQUENCY**
TSS	3/week
Total Fluoride	3/week
Total Nickel	3/week
Total Zinc	3/week

2. Outfall 003 - Utility Wastewaters

***Outfall 003** - the discharge of underflow associated with the raw river water intake clarification system which discharges to the Mississippi River.

Utility wastewater pollutants being discharged to discrete outfalls shall receive monitoring frequencies according to the following schedule:

Flow - the monitoring frequency of 1/week has been retained from the current LPDES permit, effective on July 12, 2002.

PARAMETER(S)	**MONITORING FREQUENCY**
Flow	1/week

3. Outfall(s) 004 - Stormwater

***Outfall 004** - the discharge of non-process area stormwater.

Non-process area stormwater that is uncontaminated or has a low potential of contamination and is discharged at a discrete outfall, will receive monitoring frequencies according to the following schedule:

Flow, TOC, Oil & Grease, and pH - the monitoring frequency of 1/quarter has been established in accordance with current guidance for stormwater discharges, the MSGP for Industrial Stormwater Discharges, and Best Professional Judgment. The frequency for these parameters has been retained from the current LPDES permit, effective on July 12, 2002.

PARAMETER(S)	**MONITORING FREQUENCY**
Flow	1/quarter
TOC	1/quarter
Oil & Grease	1/quarter
pH	1/quarter

4. Outfall 005 - Sanitary Wastewater

Outfall 005 - the discharge of treated sanitary wastewater.

Sanitary wastewater being discharged at discrete outfall(s), receive the following the monitoring frequencies:

Flow, 1/week - has been retained from the current LPDES Permit, effective on July 12, 2002.

PARAMETER(S)	**MONITORING FREQUENCY**
Flow	1/week

BOD_5, TSS, Fecal Coliform, and pH, 1/month - has been retained from the current LPDES Permit, effective on July 12, 2002.

PARAMETER(S)	**MONITORING FREQUENCY**
BOD_5	1/month
TSS	1/month
Fecal Coliform	1/month
pH	1/month

X. Compliance History/DMR Review :

A compliance history/DMR review was done covering the period of January 2005 to October 2007.

A. DMR Excursions Reported

DATE	PARAMETER	OUTFALL	REPORTED VALUE	PERMIT LIMITS
01/31/2005	BOD5	005	35.71 mg/L, Monthly Average	30.0 mg/L, Monthly Average
01/31/2005	TSS	005	58.26 mg/L, Monthly Average	30.0 mg/L, Monthly Average
			105.92 mg/L, Weekly Average	45.0 mg/L, Weekly Average
01/31/2005	Fecal Coliform	005	1400 colonies/ 100 ml, Monthly Average	200 colonies/ 100 ml, Monthly Average
			2000 colonies/ 100 ml, Weekly Average	400 colonies/ 100 ml, Weekly Average
07/31/2005	TSS	005	47.0 mg/L, Weekly Average	45.0 mg/L, Weekly Average
07/31/2005	Fecal Coliform	005	620 colonies/ 100 ml, Weekly Average	400 colonies/ 100 ml, Weekly Average
11/30/2005	BOD5	005	30.85 mg/L, Monthly Average	30.0 mg/L, Monthly Average
11/30/2005	TSS	005	37.5 mg/L, Monthly Average	30.0 mg/L, Monthly Average
03/31/2006	TSS	002	9198.36 lbs/day, Daily Maximum	9042.00 lbs/day, Daily Maximum
12/31/2006	Total Fluoride	001	654.72 lbs/day, Daily Maximum	326.08 lbs/day, Daily Maximum
06/30/2007	ph Range Excursion	001	out of range for >60 minutes	out of range for <= 60 minutes

B. Inspections - A facility inspection was conducted on May 22, 2007. The following items were noted in the inspection report:

A review of DMRs from October 2005 to the present revealed an excursion for Total Fluoride in December 2006. No other items of concern were noted.

C. Compliance History - Compliance Order WE-C-05-0312 was issued on August 24, 2005 due to multiple excursions on outfalls 001 and 005 from the period of March 2001 through

January 2005. This action is still open.

XI. "IT" Questions - Applicant's Responses

This is a major facility which did not request any major changes to the renewed LPDES permit, therefore, IT Questions were not required to be answered.

XII. Endangered Species:

The receiving waterbody, Subsegment 070301 of the Mississippi River Basin, has been identified by the U.S. Fish and Wildlife Service (FWS) as habitat for the Pallid Sturgeon, which are listed as an endangered species. The preliminary draft permit has been submitted to the FWS for review in accordance with a letter dated 10/24/07 from Boggs (FWS) to Brown (LDEQ). As set forth in the Memorandum of Understanding between the LDEQ and the FWS, and after consultation with FWS, LDEQ has determined that the issuance of the LPDES permit is not likely to have an adverse effect upon the Pallid Sturgeon. Effluent limitations are established in the permit to ensure protection of aquatic life and maintenance of the receiving water as aquatic habitat. The more stringent of technology and water quality based limits (as applicable) have been applied to ensure maximum protection of the receiving water.

XIII. Historic Sites:

The discharge is from an existing facility location, which does not include an expansion on undisturbed soils. Therefore, there should be no potential effect to sites or properties on or eligible for listing on the National Register of Historic Places, and in accordance with the "Memorandum of Understanding for the Protection of Historic Properties in Louisiana Regarding LPDES Permits" no consultation with the Louisiana State Historic Preservation Officer is required.

XIV. Tentative Determination:

On the basis of preliminary staff review, the Department of Environmental Quality has made a tentative determination to permit for the discharge described in the application.

XV. Variances:

No requests for variances have been received by this Office.

XVI. Public Notices:

Upon publication of the public notice, a public comment period shall begin on the date of publication and last for at least 30 days thereafter. During this period, any interested persons may submit written comments on the draft permit and may request a public hearing to clarify issues involved in the permit decision at this Office's address on the first page of the fact sheet. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing.

Public notice published in:

Local newspaper of general circulation

Office of Environmental Services Public Notice Mailing List

Appendix A

10/23/2007 Calculation of Technology Based Limits for Honeywell International, Inc.\Geismar Plant

(*1) TABLE 1

Permittee:	Honeywell International, Inc.\Geismar Plant		
Permit Number:	LA0006181, AI2082		
Appendix	Appendix A-1		
[] Flow Basis 1=proc, 0=all	0		
Concentration flow, (MGD)	---		
GL vs Old, 0=n, 1=y, 2=GL+Old	1		
Outfall number	Out. 001		
Deepwell fract., 40 CFR 122.50			
(*2)			
OCPSF Subpart I=1, J=2	2		
OCPSF PROCESS FLOW CALCULATION:	MGD	gpm	
MultiProducts Plant Process WW	0.0252		
Aclon Plant Process WW	0.145		
HFC-125/245fa Plant Process WW	0.027		
Potentially Contaminated SW	0.018		
Process Scrubbers	0.305		
Thermal Oxidizer Scrubbers	0.084		
TOTAL PROCESS FLOW:	0.6042	---	
BOD5/TSS BPJ ALLOCATION FLOWS:	MGD	gpm	
SANITARY WW:			
MISCELLANEOUS:	MGD	gpm	
Misc. Ancillary Non Process WW	0.022		
TOTAL MISCELLANEOUS FLOWS:	0.022	---	
UTILITY WASTEWATER:	MGD	gpm	
MultiProducts Cooling Towers	0.00771		
Boiler Blowdown	0.152		
MultiProducts Plant Softener Re	0.001614		
Acl/HFC-125/245fa Rej/BW/Regen	0.075		
Aclon Plant Cooling Towers	0.0022		
HFC -125/245fa Cooling Towers	0.0255		
TOTAL UTILITY WW FLOWS:	0.264024	---	
TOTAL OCPSF+BPJ FLOW:	0.890224	---	

(*3) Fraction of OCPSF Conc. or BPJ []

Fract =0, []=1	0	BOD,avg	BOD,max	TSS,avg	TSS,max
Miscellaneous WW		0.5	0.5	0.5	0.5
Misc. WW, mg/L		5	10	10	20
Utility WW		0.5	0.5	1	1
Utility WW, mg/L		5	10	10	20
Sanitary, mg/L		30	45	30	45

(*4)

Metal+CN Flows:	MGD	gpm
Total Chromium	0.6042	
Total Copper		
Total Lead		
Total Nickel		
Total Zinc		
Total Cyanide		

(*5)

OCPSF Guideline Subpart:	Prod. 1000 lbs per day	Prod. Fraction of Total
B, Rayon Fibers		---
C, Other Fibers		---
D,Thermoplastic Resins		0.024
E,Thermosetting Resins		---
F, Commodity Organics		---
G, Bulk Organics		0.976
H, Specialty Organics		---
Total:	---	1

(*6)

COD & TOC Ratios:	Average	Maximum
COD/BOD5 ratio		
TOC/BOD5 ratio		
COD,TOC, O&G []:	Average	Maximum
COD, mg/L		
TOC, mg/L		
O&G, mg/L		

(*7)

INORGANIC GUIDELINES:						
New Source 1=y 0=n	0	Prod.			OCPSF BOD5	
O Fraction=0, []=1	0	1000 lbs	Flow	Flow	OCPSF Fraction	
40 CFR 415		per day	MGD	gpm	Avg	Max
40 CFR 415.63 Mercury					1	1
40 CFR 415.63 Diaphragm					1	1
					1	1
					1	1

(*8)

OCPSF Alternate Flows:	MGD
Conventionals:	
Organic Toxics:	---
Process Waste Water	
Process Stormwater	

(*9)

Page and Table Numbering	1=y, 0=n
1st Input Page	1
2nd Input Page	0
OCPSF	1
SS Metals	0
Inorganic	1
Fertilizer	0
Pesticides	0
COD/TOC/O&G Tbl	0
BOD/TSS Tbl	1
Table Designation Sequence	
Pesticides &OCPSF	0
PestMetal 1=y,0=n	0

Flow (*10)

MGD	COD and TOC limits, precalc	
---	COD,Avg (lbs/day)	0
---	COD,Max (lbs/day)	0
---	TOC,Avg (lbs/day)	0
	TOC,Max (lbs/day)	0

Conversion Factors:	
Conv mg/L-->lbs/da	8.34
Conv ug/L-->mg/L:	0.0001
Conv gpm-->MGD:	0.00144

OCPSF+Inorganic 0.890224

Calculation of Technology Based Limits for Honeywell International, Inc.\Geismar Plant

Out. 001

Conventional pollutant loading calculations, BOD5 and TSS

TABLE 2

Calculation of BOD5, and TSS limits:

(*1) OCPSF GL 40 CFR 414 Subpart:	(*2) BOD5 Avg mg/L	(*3) BOD5 Max mg/L	(*4) TSS Avg mg/L	(*5) TSS Max mg/L	(*6) Prod. 1000 lbs per day	(*7) Prod. Fraction of Total	(*8) Process Flow (MGD)	(*9) Conv. Factor	(*10) BOD5 Avg lbs/day	(*11) BOD5 Max lbs/day	(*12) TSS Avg lbs/day	(*13) TSS Max lbs/day
B, Rayon Fibers							---	8.34	---	---	---	---
C, Other Fibers							---	8.34	---	---	---	---
D,Thermoplastic Resins	24	64	40	130		0.024	0.6042	8.34	2.90248	7.739947	4.837467	15.72177
E,Thermosetting Resins							---	8.34	---	---	---	---
F, Commodity Organics							---	8.34	---	---	---	---
G, Bulk Organics	34	92	49	159		0.976	0.6042	8.34	167.2151	452.4644	240.9865	781.9765
H, Specialty Organics							---	8.34	---	---	---	---
Total/Weighted[]	33.76	91.328	48.784	158.304		1	0.6042	8.34	170.1176	460.2043	245.8239	797.6983

BPJ Sources/Guidelines BPJ Sources:	BOD5 Avg mg/L	BOD5 Max mg/L	TSS Avg mg/L	TSS Max mg/L	Flow (MGD)	Conv. Factor	BOD5 Avg lbs/day	BOD5 Max lbs/day	TSS Avg lbs/day	TSS Max lbs/day
Sanitary WW:					---	8.34	---	---	---	---
Miscellaneous:	16.88	45.664	24.392	79.152	0.022	8.34	3.097142	8.378431	4.475444	14.52281
Utility Wastewater:	16.88	45.664	48.784	158.304	0.264024	8.34	37.16909	100.5503	107.4204	348.5791
					---	8.34	---	---	---	---
					---	8.34	---	---	---	---
					---	8.34	---	---	---	---
BPJ Source Total:					0.286024		40.26623	108.9287	111.8959	363.1019

Other Guidelines: Inorganic 40 CFR 415	BOD5 Avg mg/L	BOD5 Max mg/L	TSS Avg lbs/1000	TSS Max lbs/1000	Prod. 1000 lbs per day	Flow to Tmt. Plt. Fraction	Flow (MGD)	Conv. Factor	BOD5 Avg lbs/day	BOD5 Max lbs/day	TSS Avg lbs/day	TSS Max lbs/day
					---	---	---	8.34	---	---	---	---
					---	---	---	8.34	---	---	---	---
					---	---	---	8.34	---	---	---	---
					---	---	---	8.34	---	---	---	---

	BOD5 Avg lbs/1000	BOD5 Max lbs/1000	TSS Avg lbs/1000	TSS Max lbs/1000	Prod. 1000 lbs per day	Flow to Tmt. Plt. Fraction	Flow (MGD)	BOD5 Avg lbs/day	BOD5 Max lbs/day	TSS Avg lbs/day	TSS Max lbs/day
					---	---	---	---	---	---	---
					---	---		---	---	---	---
					---	---		---	---	---	---
Other Guideline Total (lbs/day)							---	---	---	---	---
BOD5/TSS Grand Total (lbs/day)							0.890224	210.3838	569.1331	357.7198	1160.8

Calculation of Technology Based Limits for Honeywell International, Inc.\Geismar Plant

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Toxic pollutant loading calculations, heavy metals, TRC, and Cyanide

TABLE 3

40 CFR 414 OCPSF, 40 CFR 415, and 40 CFR 455 as applicable

(*1) Subcategory and/or Source	(*2) Chromium Avg mg/L	(*3) Chromium Max mg/L	(*4) Copper Avg mg/L	(*5) Copper Max mg/L	(*6) Prod. 1000 lbs per day	(*7) Flow to Tmt. Plt. Fraction	(*8) Chromium Flow (MGD)	(*9) Copper Flow (MGD)	(*10) Chromium Avg lbs/day	(*11) Chromium Max lbs/day	(*12) Copper Avg lbs/day	(*13) Copper Max lbs/day
OCPSF Subpart J +BPJ	1.11	2.77					0.6042	---	5.593321	13.95811	---	---
								---	---	---	---	---
								---	---	---	---	---
	Avg lbs/1000	Max lbs/1000	Avg lbs/1000	Max lbs/1000								
					---	---			---	---	---	---
					---	---			---	---	---	---
					---	---				---	---	---
					---	---			---	---	---	---
Total							0.6042	---	5.593321	13.95811	---	---

Subcategory and/or Source	Lead Avg mg/L	Lead Max mg/L	Nickel Avg mg/L	Nickel Max mg/L	Prod. 1000 lbs per day	Flow to Tmt. Plt. Fraction	Lead Flow (MGD)	Nickel Flow (MGD)	Lead Avg lbs/day	Lead Max lbs/day	Nickel Avg lbs/day	Nickel Max lbs/day
OCPSF Subpart J +BPJ							---	---	---	---	---	---
							---	---	---	---	---	---
							---	---	---	---	---	---
	Avg lbs/1000	Max lbs/1000	Avg lbs/1000	Max lbs/1000								
					---	---			---	---	---	---
					---	---			---	---	---	---
					---	---			---	---	---	---
					---	---			---	---	---	---
Total							---	---	---	---	---	---

Subcategory and/or Source	Zinc Avg mg/L	Zinc Max mg/L	Cyanide Avg mg/L	Cyanide Max mg/L	Prod. 1000 lbs per day	Flow to Tmt. Plt. Fraction	Zinc Flow (MGD)	Cyanide Flow (MGD)	Zinc Avg lbs/day	Zinc Max lbs/day	Cyanide Avg lbs/day	Cyanide Max lbs/day
OCPSF Subpart J +BPJ							---	---	---	---	---	---
							---	---	---	---	---	---
							---	---	---	---	---	---
	Avg lbs/1000	Max lbs/1000	Avg lbs/1000	Max lbs/1000								
					---	---			---	---	---	---
					---	---			---	---	---	---
					---	---			---	---	---	---
					---	---			---	---	---	---
Total							---	---	---	---	---	---

Calculation of Technology Based Limits for Honeywell International, Inc.\Geismar Plant

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Toxic pollutant loading calculations, heavy metals, TRC, and Cyanide

TABLE 3

40 CFR 415 and 40 CFR 455 as applicable

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
Subcategory	TRC Avg lbs/1000	TRC Max lbs/1000	Mercury Avg lbs/1000	Mercury Max lbs/1000	Prod. 1000 lbs per day	Flow to Tmt. Plt. Fraction	TRC Flow (MGD)	Mercury Flow (MGD)	TRC Avg lbs/day	TRC Max lbs/day	Mercury Avg lbs/day	Mercury Max lbs/day
					---	---			---	---	---	---
					---	---			---	---	---	---
					---	---			---	---	---	---
					---	---			---	---	---	---
					---	---			---	---	---	---
Other Sources, BPJ (Flow Based)	Avg mg/L	Max mg/L	Avg mg/L	Max mg/L					Avg lbs/day	Max lbs/day	Avg lbs/day	Max lbs/day
							---		---	---	---	---
							---		---	---	---	---
							---		---	---	---	---
Total							---		---	---	---	---

Subcategory	Cyanide A Avg lbs/1000	Cyanide A Max lbs/1000	Fluoride A Avg lbs/1000	Fluoride Max lbs/1000	Prod. 1000 lbs per day	Flow to Tmt. Plt. Fraction	Cyanide A Flow (MGD)	Fluoride A Flow (MGD)	Cyanide A Avg lbs/day	Cyanide A Max lbs/day	Fluoride Avg lbs/day	Fluoride Max lbs/day
					---	---			---	---	---	---
					---	---			---	---	---	---
					---	---			---	---	---	---
					---	---			---	---	---	---
					---	---			---	---	---	---
Other Sources, BPJ (Flow Based)	Avg mg/L	Max mg/L	Avg mg/L	Max mg/L					Avg lbs/day	Max lbs/day	Avg lbs/day	Max lbs/day
Process Wastewater							---		---	---	---	---
BPJ-Process Flow [*1]			33	66			---	0.6042	---	---	166.2879	332.5758
							---		---	---	---	---
Total							---		---	---	166.2879	332.5758

[*1] Fluoride limitations based on concentrations in Table 12-25 of the Proposed Inorganic Chemicals Developement Document (ICDD), EPA 440/1-79-007, June 1980, Hydrofluoric Acid Subcategory. These limitations, which were initially established in the NPDES permit for the Honeywell-Baton Rouge Facility (LA0000329, AI 289), effective date 4/01/94, are now considered BAT for this facility as well.

Calculation of Technology Based Limits for Honeywell International, Inc.\Geismar Plant

Out. 001

TABLE 4

Calculation Summary of Conventional and Non-Conventional Limits

(*1) Parameter	(*2) G/L BPJ Avg. mg/L	(*3) G/L-BPJ Max mg/L	(*4) Process Flow (MGD)	(*5) G/L-BPJ Avg lbs/day	(*6) G/L-BPJ Max lbs/day	(*7) Tech Old Avg lbs/day	(*8) Tech Old Anti-Back Max0=no scr. lbs/day1=OldvsGL 2=Old+GL	(*9) Out. 001 Avg lbs/day	(*10) Out. 001 Max lbs/day	(*11) Out. 001 Avg mg/L	(*12) Out. 001 Max mg/L
CONVENTIONAL											
BOD5				210.3838	569.1331		---	210	569	---	---
TSS				357.7198	1160.8		---	358	1161	---	---
Oil and Grease				---	---		---	---	---	---	---
NON-CONVENTIONAL											
COD				---	---		---	---	---	---	---
TOC				---	---		---	---	---	---	---
TRC				---	---		---	---	---	---	---
Ammonia Nitrogen				---	---		---	---	---	---	---
Organic Nitrogen				---	---		---	---	---	---	---
Nitrate Nitrogen				---	---		---	---	---	---	---

Calculation Summary of Metal and Cyanide Toxic Limits

(*1)	(*2) G/L-BPJ Avg. mg/L	(*3) G/L-BPJ Max mg/L	(*4) Process Flow (MGD)	(*5) G/L-BPJ Avg lbs/day	(*6) G/L-BPJ Max lbs/day	(*7) Tech Old Avg lbs/day	(*8) Tech Old Anti-Back Max0=no scr. lbs/day1=OldvsGL 2=Old+GL	(*9) Out. 001 Avg lbs/day	(*10) Out. 001 Max lbs/day	(*11) Out. 001 Avg mg/L	(*12) Out. 001 Max mg/L
METALS AND CYANIDE											
Total Chromium	1.11	2.77	0.6042	5.593321	13.95811		---	5.59	13.96	---	---
Total Copper				---	---		---	---	---	---	---
Total Lead				---	---		---	---	---	---	---
Total Nickel				---	---		---	---	---	---	---
Total Zinc				---	---		---	---	---	---	---
Total Mercury				---	---		---	---	---	---	---
Total Cyanide				---	---		---	---	---	---	---
Amenable Cyanide				---	---		---	---	---	---	---
Fluoride [*1]				166.2879	332.5758		---	166.29	332.58	---	---
				---	---		---	---	---	---	---
				---	---		---	---	---	---	---

Calculation of Technology Based Limits for Honeywell International, Inc.\Geismar Plant

Out. 001

Calculation of Toxic Limits, OCPSF Subpart J

TABLE 5

(*1) OCPSF Parameter Subpart J	(*2) G/L Val Avg. mg/L	(*3) G/L Val Max mg/L	(*4) Process Flow (MGD)	(*5) G/L Val Avg lbs/day	(*6) G/L Val Max lbs/day	(*7) Tech Old Avg lbs/day	(*8) Tech Old Max 0=no scr. 1=OldvsGL 2=Old+GL	(*9) G/L-BPJ lbs/day	(*10) Out. 001 Avg lbs/day	(*11) Out. 001 Max lbs/day	(*12) Out. 001 Avg mg/L	(*13) Out. 001 Max mg/L
VOLATILE COMPOUNDS												
Acrylonitrile	0.094	0.232	0.6042	0.473669	1.169054			---	0.47	1.17	---	---
Benzene	0.057	0.134	0.6042	0.287225	0.67523			---	0.29	0.68	---	---
Carbon Tetrachloride	0.142	0.38	0.6042	0.715542	1.914831			---	0.72	1.91	---	---
Chlorobenzene	0.142	0.38	0.6042	0.715542	1.914831			---	0.72	1.91	---	---
Chloroethane	0.11	0.295	0.6042	0.554293	1.486513			---	0.55	1.49	---	---
Chloroform	0.111	0.325	0.6042	0.559332	1.637684			---	0.56	1.64	---	---
1,1-Dichloroethane	0.022	0.059	0.6042	0.110859	0.297303			---	0.11	0.30	---	---
1,2-Dichloroethane	0.18	0.574	0.6042	0.907025	2.892402			---	0.91	2.89	---	---
1,1-Dichloroethylene	0.022	0.06	0.6042	0.110859	0.302342			---	0.11	0.30	---	---
1,2-trans-Dichloro-ethylene	0.025	0.066	0.6042	0.125976	0.332576			---	0.13	0.33	---	---
1,2-Dichloropropane	0.196	0.794	0.6042	0.987649	4.000988			---	0.99	4.00	---	---
1,3-Dichloropropylyene	0.196	0.794	0.6042	0.987649	4.000988			---	0.99	4.00	---	---
Ethylbenzene	0.142	0.38	0.6042	0.715542	1.914831			---	0.72	1.91	---	---
Methyl Chloride	0.11	0.295	0.6042	0.554293	1.486513			---	0.55	1.49	---	---
Methylene Chloride	0.036	0.17	0.6042	0.181405	0.856635			---	0.18	0.86	---	---
Tetrachloroethylene	0.052	0.164	0.6042	0.262029	0.826401			---	0.26	0.83	---	---
Toluene	0.028	0.074	0.6042	0.141093	0.372888			---	0.14	0.37	---	---
1,1,1-Trichloroethane	0.022	0.059	0.6042	0.110859	0.297303			---	0.11	0.30	---	---
1,1,2-Trichloroethane	0.032	0.127	0.6042	0.161249	0.639957			---	0.16	0.64	---	---
Trichloroethylene	0.026	0.069	0.6042	0.131015	0.347693			---	0.13	0.35	---	---
Vinyl Chloride	0.097	0.172	0.6042	0.488786	0.866713			---	0.49	0.87	---	---
ACID COMPOUNDS												
2-Chlorophenol												
2,4-Dichlorophenol												
2,4-Dimethylphenol	0.019	0.047	0.6042	0.095742	0.236834			---	0.10	0.24	---	---
4,6-Dinitro-o-cresol	0.078	0.277	0.6042	0.393044	1.395811			---	0.39	1.40	---	---
2,4-Dinitrophenol	1.207	4.291	0.6042	6.082107	21.62247			---	6.08	21.62	---	---
2-Nitrophenol	0.065	0.231	0.6042	0.327537	1.164015			--	0.33	1.16	---	---
4-Nitrophenol	0.162	0.576	0.6042	0.816323	2.90248			---	0.82	2.90	---	---
Phenol	0.019	0.047	0.6042	0.095742	0.236834			---	0.10	0.24	---	---

Calculation of Technology Based Limits for Honeywell International, Inc.\Geismar Plant

Out. 001

Calculation of Toxic Limits, OCPSF Subpart J

TABLE 5

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
OCPSF Parameter	G/L Val	G/L Val	Process	G/L Val	G/L Val	Tech Old	Tech Old	Anti-Back	Out. 001	Out. 001	Out. 001	Out. 001
Subpart J	Avg.	Max	Flow	Avg	Max	Avg	Max0=no scr.		Avg	Max	Avg	Max
	mg/L	mg/L	(MGD)	lbs/day	lbs/day	lbs/day	lbs/day1=OldvsGL		lbs/day	lbs/day	mg/L	mg/L
							2=Old+GL					
BASE/NEUTRAL COMPOUNDS												
Acenaphthene	0.019	0.047	0.6042	0.095742	0.236834			---	0.10	0.24	---	---
Acenaphthylene	0.019	0.047	0.6042	0.095742	0.236834			---	0.10	0.24	---	---
Anthracene	0.019	0.047	0.6042	0.095742	0.236834			---	0.10	0.24	---	---
Benzo(a)anthracene	0.019	0.047	0.6042	0.095742	0.236834			---	0.10	0.24	---	---
Benzo(a)pyrene	0.02	0.048	0.6042	0.100781	0.241873			---	0.10	0.24	---	---
3,4-Benzofluoranthene	0.02	0.048	0.6042	0.100781	0.241873			---	0.10	0.24	---	---
Benzo(k)fluoranthene	0.019	0.047	0.6042	0.095742	0.236834			---	0.10	0.24	---	---
Bis(2-ethylhexyl)-phthalate	0.095	0.258	0.6042	0.478708	1.300069			---	0.48	1.30	---	---
Chrysene	0.019	0.047	0.6042	0.095742	0.236834			---	0.10	0.24	---	---
1,2-Dichlorobenzene	0.196	0.794	0.6042	0.987649	4.000988			---	0.99	4.00	---	---
1,3-Dichlorobenzene	0.142	0.38	0.6042	0.715542	1.914831			---	0.72	1.91	---	---
1,4-Dichlorobenzene	0.142	0.38	0.6042	0.715542	1.914831			---	0.72	1.91	---	---
Diethyl phthalate	0.046	0.113	0.6042	0.231795	0.56941			---	0.23	0.57	---	---
Dimethyl phthalate	0.019	0.047	0.6042	0.095742	0.236834			---	0.10	0.24	---	---
Di-n-butyl phthalate	0.02	0.043	0.6042	0.100781	0.216678			---	0.10	0.22	---	---
2,4-Dinitrotoluene												
2,6-Dinitrotoluene												
Fluoranthene	0.022	0.054	0.6042	0.110859	0.272108			---	0.11	0.27	---	---
Fluorene	0.019	0.047	0.6042	0.095742	0.236834			---	0.10	0.24	---	---
Hexachlorobenzene	0.196	0.794	0.6042	0.987649	4.000988			---	0.99	4.00	---	---
Hexachlorobutadiene	0.142	0.38	0.6042	0.715542	1.914831			---	0.72	1.91	---	---
Hexachloroethane	0.196	0.794	0.6042	0.987649	4.000988			---	0.99	4.00	---	---
Naphthalene	0.019	0.047	0.6042	0.095742	0.236834			---	0.10	0.24	---	---
Nitrobenzene	2.237	6.402	0.6042	11.27231	32.25986			---	11.27	32.26	---	---
Phenanthrene	0.019	0.047	0.6042	0.095742	0.236834			---	0.10	0.24	---	---
Pyrene	0.02	0.048	0.6042	0.100781	0.241873			---	0.10	0.24	---	---
1,2,4-Trichlorobenzene	0.196	0.794	0.6042	0.987649	4.000988			---	0.99	4.00	---	---

10/25/2007 Calculation of Technology Based Limits for Honeywell International, Inc. / Geismar Plant

(*1) TABLE 1

Permittee:	Honeywell International, Inc. / Geismar Plant
Permit Number:	LA0006181
Appendix	Appendix A-2
[] Flow Basis 1=proc, 0=all	0
Concentration flow, (MGD)	---
GL vs Old, 0=n, 1=y, 2=GL+Old	1
Outfall number	Out. 002
Deepwell fract., 40 CFR 122.50	

(*2)
OCPSF Subpart I=1, J=2

OCPSF PROCESS FLOW CALCULATION:	MGD	gpm
TOTAL PROCESS FLOW:	---	---
BOD5/TSS BPJ ALLOCATION FLOWS:	MGD	gpm
SANITARY WW:		
MISCELLANEOUS:	MGD	gpm
TOTAL MISCELLANEOUS FLOWS:	---	---
UTILITY WASTEWATER:	MGD	gpm
TOTAL UTILITY WW FLOWS:	---	---
TOTAL OCPSF+BPJ FLOW:	---	---

Fraction of OCPSF Concentrations or BPJ []

(*3)

	BOD,avg	BOD,max	TSS,avg	TSS,max
U. Fract =0, []=1	0			
Miscellaneous WW	0.5	0.5	0.5	0.5
Utility WW	0.25	0.25	0.25	0.25
Utility WW, mg/L	5	10	10	20
Sanitary, mg/L	30	45	30	45

(*4)

Metal+CN Flows:	MGD	gpm
Total Chromium		
Total Copper		
Total Lead		
Total Nickel		
Total Zinc		
Total Cyanide		

(*5)

OCPSF Guideline Subpart:	Prod. 1000 lbs per day	Prod. Fraction of Total
B, Rayon Fibers		---
C, Other Fibers		---
D, Thermoplastic Resins		---
E, Thermosetting Resins		---
F, Commodity Organics		---
G, Bulk Organics		---
H, Specialty Organics		---
Total:	---	---

(*6)

COD & TOC Ratios:	Average	Maximum
COD/BOD5 ratio		
TOC/BOD5 ratio		
COD, TOC, O&G []:	Average	Maximum
COD, mg/L		
TOC, mg/L		
O&G, mg/L		

(*7)
INORGANIC GUIDELINES:

New Source 1=y 0=n	0
O Fraction=0, []=1	0
40 CFR 415	

	Prod. 1000 lbs per day	Flow MGD	Flow gpm
Subpt H: Hydrofluoric Acid	1055.474	2.20898	
Subpt W: Aluminum Fluoride			

(*8)

OCPSF Alternate Flows:	MGD
Conventionals:	
Organic Toxics:	---
Process Waste Water	
Process Stormwater	

Conversion Factors:	
Conv mg/L-->lbs/da	8.34
Conv ug/L-->mg/L:	0.0001
Conv gpm-->MGD:	0.00144

(*9)

Page and Table Numbering	1=y, 0=n
1st Input Page	1
2nd Input Page	0
OCPSF	0
SS Metals	0
Inorganic	1
Fertilizer	0
Pesticides	0
COD/TOC/O&G Tbl	0
BOD/TSS Tbl	1
Table Designation Sequence	
Pesticides &OCPSF	0
PestMetal 1=y, 0=n	0

(*10)

Flow COD and TOC limits, precalc		
MGD	COD,Avg (lbs/day)	0
---	COD,Max (lbs/day)	0
---	TOC,Avg (lbs/day)	0
---	TOC,Max (lbs/day)	0

	OCPSF BOD5 Fraction Avg	Max
40 CFR 415.63 Mercury	1	1
40 CFR 415.63 Diaphragm	1	1

OCPSF+Inorganic 2.20898

Calculation of Technology Based Limits for Honeywell International, Inc. / Geismar Plant

Out. 002

Conventional pollutant loading calculations, BOD5 and TSS

TABLE 2

Calculation of BOD5, and TSS limits:

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
OCPSF GL 40 CFR 414 Subpart:	BOD5 Avg mg/L	BOD5 Max mg/L	TSS Avg mg/L	TSS Max mg/L	Prod. 1000 lbs per day	Prod. Fraction of Total	Process Flow (MGD)	Conv. Factor	BOD5 Avg lbs/day	BOD5 Max lbs/day	TSS Avg lbs/day	TSS Max lbs/day
B, Rayon Fibers							---	8.34	---	---	---	---
C, Other Fibers							---	8.34	---	---	---	---
D,Thermoplastic Resins							---	8.34	---	---	---	---
E,Thermosetting Resins							---	8.34	---	---	---	---
F, Commodity Organics							---	8.34	---	---	---	---
G, Bulk Organics							---	8.34	---	---	---	---
H, Specialty Organics							---	8.34	---	---	---	---
Total/Weighted[]	---	---	---	---			---	8.34	---	---	---	---
BPJ Sources/Guidelines BPJ Sources:	BOD5 Avg mg/L	BOD5 Max mg/L	TSS Avg mg/L	TSS Max mg/L			Flow (MGD)	Conv. Factor	BOD5 Avg lbs/day	BOD5 Max lbs/day	TSS Avg lbs/day	TSS Max lbs/day
Sanitary WW:							---	8.34	---	---	---	---
Miscellaneous:							---	8.34	---	---	---	---
Utility Wastewater:							---	8.34	---	---	---	---
							---	8.34	---	---	---	---
							---	8.34	---	---	---	---
							---	8.34	---	---	---	---
BPJ Source Total:							---		---	---	---	---
Other Guidelines: Inorganic 40 CFR 415	BOD5 Avg mg/L	BOD5 Max mg/L	TSS Avg lbs/1000	TSS Max lbs/1000	Prod. 1000 lbs per day	Flow to Tmt. Plt. Fraction	Flow (MGD)	Conv. Factor	BOD5 Avg lbs/day	BOD5 Max lbs/day	TSS Avg lbs/day	TSS Max lbs/day
					---	---	---	8.34	---	---	---	---
					---	---	---	8.34	---	---	---	---
Subpt H, BPT, 415.82			5.3	11	1055.474	---	---	8.34	---	---	5594.012	11610.21
					---	---	---	8.34	---	---	---	---
	BOD5 Avg lbs/1000	BOD5 Max lbs/1000	TSS Avg lbs/1000	TSS Max lbs/1000	Prod. 1000 lbs per day	Flow to Tmt. Plt. Fraction	Flow (MGD)		BOD5 Avg lbs/day	BOD5 Max lbs/day	TSS Avg lbs/day	TSS Max lbs/day
					---	---	---		---	---	---	---
					---	---			---	---	---	---
					---	---			---	---	---	---
Other Guideline Total (lbs/day)							---		---		5594.012	11610.21
BOD5/TSS Grand Total (lbs/day)							---		---		5594.012	11610.21

Calculation of Technology Based Limits for Honeywell International, Inc. / Geismar Plant

Out. 002

Toxic pollutant loading calculations, heavy metals, TRC, and Cyanide

TABLE 3

40 CFR 414 OCPSF, 40 CFR 415, and 40 CFR 455 as applicable

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
Subcategory and/or Source	Chromium Avg mg/L	Chromium Max mg/L	Copper Avg mg/L	Copper Max mg/L	Prod. 1000 lbs per day	Flow to Tmt. Plt. Fraction	Chromium Flow (MGD)	Copper Flow (MGD)	Chromium Avg lbs/day	Chromium Max lbs/day	Copper Avg lbs/day	Copper Max lbs/day
							---	---	---	---	---	---
							---	---	---	---	---	---
							---	---	---	---	---	---
	Avg lbs/1000	Max lbs/1000	Avg lbs/1000	Max lbs/1000								
					---	---			---	---	---	---
					---	---			---	---	---	---
Subpt H, BAT, 415.83					---	---			---	---	---	---
					---	---			---	---	---	---
Total							---	---	---	---	---	---

Subcategory and/or Source	Lead Avg mg/L	Lead Max mg/L	Nickel Avg mg/L	Nickel Max mg/L	Prod. 1000 lbs per day	Flow to Tmt. Plt. Fraction	Lead Flow (MGD)	Nickel Flow (MGD)	Lead Avg lbs/day	Lead Max lbs/day	Nickel Avg lbs/day	Nickel Max lbs/day
							---	---	---	---	---	---
							---	---	---	---	---	---
							---	---	---	---	---	---
	Avg lbs/1000	Max lbs/1000	Avg lbs/1000	Max lbs/1000								
					---	---			---	---	---	---
					---	---			---	---	---	---
Subpt H, BAT, 415.83			0.006	0.02	1055.474	---			---	---	6.332844	21.10948
					---	---			---	---	---	---
Total							---	---	---	---	6.332844	21.10948

Subcategory and/or Source	Zinc Avg mg/L	Zinc Max mg/L	Cyanide Avg mg/L	Cyanide Max mg/L	Prod. 1000 lbs per day	Flow to Tmt. Plt. Fraction	Zinc Flow (MGD)	Cyanide Flow (MGD)	Zinc Avg lbs/day	Zinc Max lbs/day	Cyanide Avg lbs/day	Cyanide Max lbs/day
							---	---	---	---	---	---
							---	---	---	---	---	---
							---	---	---	---	---	---
	Avg lbs/1000	Max lbs/1000	Avg lbs/1000	Max lbs/1000								
					---	---			---	---	---	---
					---	---			---	---	---	---
Subpt H, BAT, 415.83	0.022	0.072			1055.474	---			23.22043	75.99413	---	---
					---	---			---	---	---	---
Total							---	---	23.22043	75.99413	---	---

Calculation of Technology Based Limits for Honeywell International, Inc. / Geismar Plant

Out. 002

Toxic pollutant loading calculations, heavy metals, TRC, and Cyanide

TABLE 3

40 CFR 415 and 40 CFR 455 as applicable

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
Subcategory	TRC Avg lbs/1000	TRC Max lbs/1000	Mercury Avg lbs/1000	Mercury Max lbs/1000	Prod. 1000 lbs per day	Flow to Tmt. Plt. Fraction	TRC Flow (MGD)	Mercury Flow (MGD)	TRC Avg lbs/day	TRC Max lbs/day	Mercury Avg lbs/day	Mercury Max lbs/day
					---	---			---	---	---	---
					---	---			---	---	---	---
Subpt H, BAT, 415.83					---	---			---	---	---	---
					---	---			---	---	---	---
					---	---			---	---	---	---
Other Sources, BPJ (Flow Based)	Avg mg/L	Max mg/L	Avg mg/L	Max mg/L					Avg lbs/day	Max lbs/day	Avg lbs/day	Max lbs/day
							---		---	---	---	---
							---		---	---	---	---
							---		---	---	---	---
Total							---		---	---	---	---

Subcategory	Cyanide ACyanide AFluoride Fluoride Avg lbs/1000	Max lbs/1000	Avg lbs/1000	Max lbs/1000	Prod. 1000 lbs per day	Flow to Tmt. Plt. Fraction	Cyanide Flow (MGD)	AFluoride Flow (MGD)	Cyanide ACyanide AFluoride Fluoride Avg lbs/day	Max lbs/day	Avg lbs/day	Max lbs/day
					---	---			---	---	---	---
					---	---			---	---	---	---
Subpt H, BAT, 415.83			1.6	3.4	1055.474	---			---	---	1688.758	3588.612
					---	---			---	---	---	---
					---	---			---	---	---	---
Other Sources, BPJ (Flow Based)	Avg mg/L	Max mg/L	Avg mg/L	Max mg/L					Avg lbs/day	Max lbs/day	Avg lbs/day	Max lbs/day
							---			---	---	---
							---		---	---	---	---
							---		---	---	---	---
Total							---		---	---	1688.758	3588.612

Calculation of Technology Based Limits for Honeywell International, Inc. / Geismar Plant

Out. 002

TABLE 4

Calculation Summary of Conventional and Non-Conventional Limits

(*1) Parameter	(*2) G/L-BPJ Avg. mg/L	(*3) G/L BPJ Max mg/L	(*4) Process Flow (MGD)	(*5) G/L BPJ Avg lbs/day	(*6) G/L-BPJ Max lbs/day	(*7) Tech Old Avg lbs/day	(*8) Tech Old Anti-BackOut. Max0=no scr. lbs/day1=OldvsGL 2=Old+GL	(*9)	(*10) 002 Out. Avg lbs/day	(*11) 002 Out. Max lbs/day	(*12) 002 Out. Avg mg/L	(*13) 002 Out. Max mg/L
CONVENTIONAL												
BOD5				---	---			---	---	---	---	---
TSS				5594.012	11610.21			---	5594	11610	---	---
Oil and Grease				---	---			---	---	---	---	---
NON-CONVENTIONAL												
COD				---	---			---	---	---	---	---
TOC				---	---			---	---	---	---	---
TRC				---	---			---	---	---	---	---
Ammonia Nitrogen				---	---			---	---	---	---	---
Organic Nitrogen				---	---			---	---	---	---	---
Nitrate Nitrogen				---	---			---	---	---	---	---

Calculation Summary of Metal and Cyanide Toxic Limits

(*1)	(*2) G/L-BPJ Avg. mg/L	(*3) G/L-BPJ Max mg/L	(*4) Process Flow (MGD)	(*5) G/L-BPJ Avg lbs/day	(*6) G/L-BPJ Max lbs/day	(*7) Tech Old Avg lbs/day	(*8) Tech Old Anti-BackOut. Max0=no scr. lbs/day1=OldvsGL 2=Old+GL	(*9)	(*10) 002 Out. Avg lbs/day	(*11) 002 Out. Max lbs/day	(*12) 002 Out. Avg mg/L	(*13) 002 Out. Max mg/L
METALS AND CYANIDE												
Total Chromium [*1]												
Total Copper												
Total Lead												
Total Nickel				6.332844	21.10948			---	6.3	21.1	---	---
Total Zinc				23.22043	75.99413			---	23.2	76.0	---	---
Total Mercury				---	---			---	---	---	---	---
Total Cyanide												
Amenable Cyanide				---	---			---	---	---	---	---
Fluoride				1688.758	3588.612			---	1689	3589	---	---
				---	---			---	---	---	---	---
				---	---			---	---	---	---	---

APPENDIX A-3 LA0006181, AI No. 2082

Documentation and Explanation of Technology Calculations
and Associated Lotus Spreadsheet

This is a multi-sector technology spreadsheet covering the following four guidelines: 40 CFR 414, Organic Chemicals, Plastics, and Synthetic Fibers (OCPSF), 40 CFR 415.62 and 40 CFR 415.63, Chlor-Alkali Subcategory of Subpart F of the Inorganic Chemical Guidelines and other Inorganic Chemical Guideline subparts on a case-by-case basis, 40 CFR 418, Fertilizer Manufacturing Guidelines, Subparts B, C, D, and E / BPJ Nitrogen Sources, and 40 CFR 455, Subpart A, Pesticide Chemicals Guidelines, Organic Pesticide Chemicals Manufacturing Subcategory. Other guidelines maybe included on a case-by-case basis. Regulations at 40 CFR 144(a)/LAC 33.IX.2707 require that technology-based permit limitations be placed in permits based on effluent limitations guidelines where applicable, on Best Professional Judgement (BPJ) in the absence of guidelines or on a combination of the two. Best Available Technology Economically Achievable (BAT) guideline factors and concentrations are used for non-conventional and toxic pollutants. In the absence of BAT, Best Conventional Pollutant Control Technology (BCT) is used for non-conventional pollutants. In the absence of either BAT or BCT, Best Practicable Control Technology (BPT) is used for conventional and non-conventional pollutants. BPT is used for conventional pollutants. New Source Performance Standards (NSPS) are used as the situation dictates, however in the case of the OCPSF guidelines, NSPS=BAT. In the absence of an applicable guideline for a particular parameter, BPJ shall be utilized. The term, "monthly average" or "average", refers to the 30-day monthly average of daily maximum values, "daily maximum" or "maximum", refers to the maximum for any one day. The term, "previous permit," refers to the most recently issued NPDES or LPDES permit. The spreadsheet was programmed with the capability of addressing pollutant loadings and associated BPJ allocations for any, all, or a combination of the above mentioned guidelines at a designated outfall. If the previous permit did not give a BPJ allowance for particular wastewater, none will be granted in the reissuance in accordance with CWA 402(o), and 40 CFR 122.44.l/LAC 33.IX.2707.L. The spreadsheet is set up in a table and column/section format. Each table represents a general category for data input or calculation points. Each reference column or section is marked by a set of parentheses enclosing a number and asterisk, for example (*1) or (*10). These columns or sections represent inputs, existing data sets, calculation points, or results for determining technology based limits for an effluent of concern.

Table 1

Table 1 is a data input area primarily for the OCPSF guidelines and the inorganic chemical guidelines, Sections (*2), (*3), (*4), (*5), (*6), (*7), (*8), (*10), and (*11). The Page and Table numbering sequence section, Section (*9) is used for applicable guideline(s) as well as the generalized input information in Section (*1).

(*1) General input information:

Permittee - permittee name.

Permit Number- LPDES permit number.

Appendix- Appendix designation for the header.

[] Flow Basis 1=proc, 0=all- if the flow basis for concentration limits is the same as the process flow in determining mass limits, then a "1" is placed in the designated cell. A "0" indicates the total outfall flow will be used in determining concentration based limits. See Concentration flow (MGD).

Concentration flow (MGD)- flow used for calculating concentration based limits in MGD.

GL vs Old, 0=n, 1=y, 2=GL+Old- this is the anti-backsliding (40 CFR 122.44.l, LAC 33.IX.2707.L) screening designation switch. "Old" represents the previous permit limit established by Best Professional Judgement (BPJ), which is now BAT for that facility, and "GL" represents the current

guideline calculation. If the screen indicates that the previously established limitation is more stringent, but there has been an increase in production, another spreadsheet can be run giving guideline allowances for the production increase by putting a "2" in the specified cell. This cell sets a default for all anti-backsliding throughout the spreadsheet, but different options can be selected on a parameter specific basis.

Outfall number- Outfall number is placed in the designated cell, the default is "Out. 001", abbreviated due to space limitations in other portions of the spreadsheet.

Deepwell fract., 40 CFR 122.50/LAC 33:IX.2717- this applies to any situation where a discharger that falls under mass based guidelines or mass based BPJ and is discharging a portion of their wastewater to a surface water receiving stream and the remaining portion to a deepwell (most common in La.), POTW, offsite disposal, etc. The facility's mass based limitations must be reduced by the fraction of water not being discharged to the surface water receiving the discharge. Flow based guideline effluent limitations and associated BPJ will receive adjustments in their source flows.

(*2) OCPSF Flow Calculations- OCPSF flow calculations are divided into four basic categories, 1) process, 2) sanitary wastewater, 3) miscellaneous flows, and 4) utility wastewater. Additional flows may be entered as needed. Flows can either be entered as MGD or gpm units in the designated column. The process flow is used to calculate organic toxic limitations if the facility's annual production exceeds 5 million pounds per year of final product. Process flow includes flows generated by the manufacturing process, process area stormwater, and process lab water as stated in 40 CFR 414. Other flows, such as groundwater remediation wastewater, are considered as process wastewaters on a BPJ basis. Additional flows such as utility, sanitary, and miscellaneous wastewaters are used in determining additional BPJ allocations for BOD_5 and TSS limitations, but not toxics. Miscellaneous wastewater includes, but is not limited to, wastewaters from tank farms or chemical storage areas or uncontaminated stormwater. Utility wastewater includes, but is not limited to, non-contact cooling tower blowdown, boiler blowdown, filter backwash, etc.

(*3) Fraction of OCPSF Conc. or BPJ []. Utility, Miscellaneous and other wastewaters contribute BOD_5 and TSS loadings to the process outfall if these wastewaters are discharged through the process outfall. For miscellaneous wastewaters, a BPJ determination has been made that these wastewaters receive 50% of the production weighted OCPSF concentrations for BOD_5 and TSS. For utility wastewaters, a BPJ determination has been made that these wastewaters receive 50% of the production weighted OCPSF concentrations for BOD_5 and TSS. Sanitary wastewaters shall receive BOD and TSS allocations of 30 mg/L, average, and 45 mg/L, maximum, as treatment equivalent to secondary treatment (LAC 33.IX.711.D). Other wastewaters shall be approached on a case-by-case basis. Anti-backsliding concerns and/or a previous permit may preclude the usage of the weighted OCPSF concentrations described above. Different BOD_5 and TSS fractions or concentrations may be used as the situation dictates. If the previous permit contains other concentrations, they may be utilized instead of fractions of production weighted OCPSF concentrations.

(*4) Metal+CN Flow- The OCPSF guidelines specify that only a specific metal bearing wastestream shall receive allowances under the guideline (40 CFR 414.90, 414.100). However, through experience, it has been determined that there are several other potential sources of metals through out a facility other than from a catalyst in a metal bearing wastestream especially in an acidic wastestream. Examples of these sources include reaction vessels and equipment, piping, cooling towers, boilers, raw contaminants, etc. In consideration of these factors, the whole toxics process flow is utilized per BPJ in the calculation of metal limits unless anti-backsliding concerns (40 CFR 122.44.l, LAC 33.IX.2707.L) and/or a previous permit prescribe the use of a lesser flow. For situations where site-specific metal bearing flows (BPJ and OCPSF guideline) need to be calculated, the "Site-Specific

Metal, Cyanide, and Total Residual Chlorine (TRC) Bearing Flows" table is used. Flow is entered in MGD or gpm under the specified column on the row(s) containing the metal(s) of concern.

(*5) OCPSF Guideline Subpart- BOD_5 and TSS mass limitations are calculated using a production weighted concentration. Organic chemical production figures in 1000/lbs day or production fractions of the total may be entered on the row(s) with the indicated subpart under the designated column. The production fraction will be used more frequently as many companies consider production information confidential. If a facility manufactures under only one subpart, then the production fraction shall be unity (1).

(*6) COD & TOC Ratios/COD, TOC, O&G []- Under the ratio section, it may be necessary to determine COD or TOC BPJ loadings based on BOD_5 limitations or loadings. The appropriate ratios are entered in the indicated cells. BPJ loadings for COD, TOC, and Oil and Grease (O&G) may also be determined on a concentration basis. Concentrations and flows are entered in the indicated cells. The ratios/concentrations are usually based on the previously issued permit, if one exists. If this is a new permit issuance or major modification involving a new unit, then the ratios/concentrations are usually based on similarly permitted facilities.

(*7) Inorganic Effluent Guidelines (40 CFR 415)- Inorganic guideline subpart and associated production and flow are entered as indicated. Chlor-Alkali guidelines (40 CFR 415.63) are present by default since chlor-alkali operations are most frequently associated with the production of organic chemicals (chlorinated solvents, vinyl chloride monomer, etc.). New sources are indicated by placing a "1" or a "0" in the indicated cell. Q Fraction=0, []=1, indicates whether the BPJ BOD_5 allocation fraction is entered in terms of weighted OCPSF concentrations, indicated by a "0", or other concentration under the indicated columns, indicated by a "1". Production information is entered in terms of 1000 lbs per day. Flow is entered in MGD or gpm in the appropriate column. Other inorganic guideline input information is included on a case-by-case basis.

(*8) OCPSF Alternate Flows- On a case-by-case basis it may be necessary to utilize an alternate flow for the calculation of the conventional pollutants BOD_5 and TSS loadings or the calculation of the organic toxic loadings. This will most commonly occur in cases where a deepwell is being eliminated. Units are in MGD.

(*9) Page and Table numbering sequence- This section shall be used for all guideline calculations and combinations. The user can specify that the spreadsheet number the pages and tables in accordance with the guidelines/tables being used. Unused pages and tables are numbered "0". This section also controls the printing of the spreadsheet; non-numbered pages are not printed.

(*10) Precalculated COD and TOC limits- Occasionally it may be necessary to incorporate a precalculated technology-based limit for TOC or COD based on DMR's or other sources, such as a previously issued permit. These values are entered in the designated cells.

Table 2

Table 2 is a data input area for the Fertilizer/BPJ Nitrogen Sources, and Pesticide Guidelines.

(*1) Fertilizer Effluent Guidelines (40 CFR 418)- The switch, "CBOD5, 1=y, 0=n" indicates whether $CBOD_5$ shall be substituted for BOD_5. This shall be done only if the applicant can submit effective documentation for the substitution. If $CBOD_5$ is selected, all other references to BOD in this documentation shall refer to $CBOD_5$, and all BOD concentrations shall be multiplied by the appropriate (monthly average or daily max) $CBOD_5/BOD_5$ ratio(s) as indicated. Production in 1000

lbs/day are entered on the row(s) with the appropriate guidelines. Flow is entered optionally on the rows with guideline production since the fertilizer guidelines are mass based. BPJ allocations for Ammonia Nitrogen, Organic Nitrogen, and Nitrate Nitrogen are determined under "BPJ Sources:". This includes "Production Based BPJ:", "BPJ Shipping Losses (Statistically Based):", and "Flow Based BPJ Nitrogen Sources (non-guideline)".

Under "Production Based BPJ" the switch for "BPJ Truck and Car Cleaning" applies only to granulated urea (40 CFR 418.33(b). The switch for "BPJ Ship Losses (Prod. Based)" is used only if shipping losses are calculated on the basis of production. The current BPJ production based shipping loss established by EPA Region 6 is 0.05 lbs/1000 lbs, daily average, and 0.10 lbs/1000 lbs daily maximum. This was originally set for Ammonia Nitrogen under the Ammonia production subcategory, but has been expanded to the other parameters and subcategories unless otherwise indicated in the previous permit.

BPJ Shipping Losses (statistically based)- If the facility can provide empirical data for shipping losses quantities (lbs/day), the mean and standard deviation are entered under the appropriate nitrogen category, ammonia, organic, or nitrate nitrogen to calculate 95th (daily average limit) and 99th percentiles (daily maximum limit).

Flow Based BPJ Nitrogen Sources (non-guideline)- Non-fertilizer guideline BPJ loadings for Ammonia Nitrogen, Organic Nitrogen, and Nitrate Nitrogen are determined from concentrations and flows entered in the indicated cells. If the facility has ammonia production near cooling towers, the cooling tower blowdown flow is placed on the indicated row, "BPJ CTBD Allowance".

(*2) Pesticide Guidelines, 40 CFR 455, Subpart A- This is the input area for the Organic Pesticide Chemicals Manufacturing Subcategory. The other pesticide guideline subparts were not included since they have no discharge of process wastewaters requirements. New Source and End-Of-Pipe (EOP) biological treatment indications are entered in the specified cells. The pesticide guidelines are a combination of production and flow based limitations, therefore production in 1000 lbs/day and process flow in MGD are entered in the appropriate cells. Similar to the OCPSF guidelines, specific metal and cyanide bearing wastestream flows are entered for lead and cyanide. If the organic pesticide manufacturing operation is associated with an operation that falls under the OCPSF guidelines or other guidelines that do not regulate COD, it may be necessary to determine a COD/BOD_5 ratio for non-pesticide wastewaters. These values are entered in the indicated cells. Under the last section, the appropriate pesticide name and guideline factors daily average and daily maximum are entered in the appropriate cells. TOC may be substituted for COD for manufacturers of Ametryn, Prometon, Terbutryn, Cyanazine, Atrazine, Propazine, Simazine, Terbuthylazine, Hexazinone, and Glyphosphate in accordance with 40 CFR 455.20(a). TOC/BOD_5 ratios are entered under section (*6) in Table 1.

Table 3

Site-Specific Metal, Total Residual Chlorine (TRC), and Cyanide Bearing Flow Allocation. For the metals and cyanide regulated under the OCPSF guidelines, three categories of sources are accounted for, 1) OCPSF process wastewater, 2) miscellaneous and utility wastewaters, and 3) non-OCPSF guideline wastewater. TRC allocation flows are indicated by the specific source.

(*1) Parameter/Source- Metal, Cyanide, or TRC receiving a flow allocation and the source of the flow categorized as an 1) OCPSF process wastewater, 2) miscellaneous and utility wastewater, and 3) non-OCPSF wastewater. These categories may differ as the situation dictates, i.e., TRC.

(*2) Flow, MGD- Source flow in MGD.

Table 4

Table 4 is a calculation table for the conventional pollutant loadings of BOD_5 and TSS utilizing guidelines and BPJ.

(*1) The top portion of the table lists OCPSF subparts under 40 CFR 414. The bottom portion indicated by "Other Sources/Guidelines" lists non-guideline BPJ sources, sanitary wastewater, non-process area stormwater, miscellaneous wastewaters, utility wastewaters, under "Other Sources" and other contributing guidelines under "Other Guidelines".

(*2) Average BOD_5- Average BPT guideline concentrations in mg/L, lbs/1000 lbs of daily production, or BPJ concentrations in mg/L. Inorganic allocations are made by BPJ.

(*3) Maximum BOD_5- Maximum BPT guideline concentrations in mg/L, lbs/1000 lbs of daily production, or BPJ concentrations in mg/L. Inorganic allocations are made by BPJ.

(*4) Average TSS- Average BPT guideline concentrations in mg/L, lbs/1000 lbs of daily production, or BPJ concentrations in mg/L. Inorganic wastewater TSS limitations are calculated in accordance with 40 CFR 415, which are mass based effluent guidelines.

(*5) Maximum TSS- Maximum BPT guideline concentrations in mg/L, lbs/1000 lbs of daily production, or BPJ concentrations in mg/L. Inorganic wastewater TSS limitations are calculated in accordance with 40 CFR 415, which are mass based effluent guidelines.

(*6) Production in 1000 lbs/day- These values indicate the amount of production per subpart (OCPSF, Inorganic Guidelines; commonly Chlor-Alkali, and Pesticides).

(*7) At the top of the table, Production fraction of total. These values are based on a fraction of total OCPSF production per subpart. If all OCPSF manufacturing falls under one subpart, the fraction shall be unity (1).

At the bottom of the table, Flow to Treatment Plant Fraction. Applicable to mass-based guidelines; if a portion of a process wastewater is being injected to a deepwell, POTW, or other non-surface water source, this represents the remaining fraction being discharged to the receiving water.

(*8) Flow- For the OCPSF guideline portion of the table (the upper portion), this is the process flow calculated in Table 1. Under "BPJ Sources/Guidelines", these are the other categorical BPJ flows calculated in Table 1. Under the "Other Guideline" section, this is the flow associated with the production under that guideline part or subpart. Flows associated with mass-based guidelines are not used in calculations.

(*9) Conversion factor- used in conjunction with flow (MGD) for converting mg/L to lbs per day, 8.34 lbs/gallon. Mg/L is assumed to be equivalent to ppm.

(*10) BOD_5, Average, lbs/day- For OCPSF guideline allocations the concentration in column (*2) is multiplied by the production fraction in column (*7), the flow in column (*8), the conversion factor in column (*9) yielding a monthly average BOD_5 loading applicable to that subpart. BPJ Source allocations are determined similarly to the OCPSF guideline allocations. If mass-based guidelines are

being considered under Other Guidelines", the guideline factor in column (*2) is multiplied by the production value in (*6), and the flow to treatment plant fraction in column (*7) if there is deepwell, POTW, or other disposal of process wastewater not to a surface water receiving stream. Inorganic wastewaters receive a BOD_5 allocation provided that anti-backsliding does not apply. The OCPSF guideline loadings are summed on the row with the label, "Total/Weighted[]." The BPJ Sources loadings including the OCPSF BPJ loadings are summed on the row labeled, "BPJ Source Total". Other Guideline contributions are summed on the line labeled "Other Guideline Total (lbs/day)". The grand total is on the indicated row and this is the technology limit for Monthly Average BOD_5.

(*11) BOD_5, Maximum, lbs/day- Similar to column (*10). See column (*10).

(*12) TSS, Average, lbs/day- For OCPSF guideline allocations the concentration in column (*4) is multiplied by the production fraction in column (*7), the flow in column (*8), the conversion factor in column (*9) yielding a monthly average BOD_5 loading applicable to that subpart. BPJ Source allocations are determined similarly to the OCPSF guideline allocations. If mass-based guidelines are being considered under Other Guidelines", the guideline factor in column (*4) is multiplied by the production value in (*6), and the flow to treatment plant fraction in column (*7) if there is deepwell, POTW, or other disposal of process wastewater not to a surface water receiving stream. The OCPSF guideline loadings are summed on the row with the label, "Total/Weighted[]." The BPJ Sources loadings including the OCPSF BPJ loadings are summed on the row labeled, "BPJ Source Total". Other Guideline contributions are summed on the line labeled "Other Guideline Total (lbs/day)". The grand total is on the indicated row and this is the technology limit for Monthly Average TSS.

(*13) TSS, Maximum, lbs/day- Similar to column (*12). See column (*12).

Table 5

Table 5 is a calculation table for the guideline and BPJ pollutant loadings of COD, TOC, and Oil and Grease.

(*1) Lists applicable guideline subparts, and sources that contribute COD, TOC, and Oil and Grease loading.

(*2) Average COD or O&G guideline factor (lbs/1000 lbs daily production), BPJ or guideline concentration (mg/L), COD to BOD_5 ratio, and Average O&G BPJ concentration (mg/L). COD to BOD_5 ratios or concentrations are calculated in the following order of precedence: 1) from the previously issued NPDES permit with BOD_5 and COD, 2) from the previously issued Louisiana Water Discharge Permit System (LWDPS) permit with BOD_5 and COD, 3) from the application. BPJ Oil and Grease concentration(s) are calculated utilizing the principles of mass balance, flow, and mass loadings from the previously issued NPDES permit.

(*3) Maximum COD or O&G guideline factor (lbs/1000 lbs daily production), BPJ or guideline concentration (mg/L), COD to BOD_5 ratio, and Maximum O&G BPJ concentration (mg/L). See discussion for column (*2).

(*4) Average TOC guideline factor (lbs/1000 lbs daily production), BPJ or guideline concentration (mg/L), and TOC to BOD_5 ratio. TOC to BOD_5 ratios and TOC concentrations are calculated in the following order of precedence: 1) from the previously issued NPDES permit with BOD_5 and TOC, 2) from the previously issued Louisiana Water Discharge Permit System (LWDPS) permit with BOD_5 and TOC, 3) from the application.

(*5) Maximum TOC guideline factor (lbs/1000 lbs daily production), BPJ or guideline concentration (mg/L), or TOC to BOD_5 ratio. See discussion for column (*4).

(*6) Production in 1000 lbs/day/BOD_5 limit, Average- Indicates amount of production per guideline subpart. Under the ratio section, BOD_5 limit, Average, this is a previously calculated average BOD_5 limit.

(*7) Flow to Treatment Plant Fraction/COD Flow, MGD/BOD_5 limit, Maximum/O&G Flow, MGD- If a facility with mass-based guidelines is discharging a portion of their wastewater to a deepwell, POTW, or other source that is not the receiving water(s), the fraction discharged to the surface receiving water(s) is placed in this column for mass-based limit calculation. Under the BPJ Source(s) or Flow based Guidelines section, COD Flow, MGD, is entered in the indicated cell. Under the ratio section, BOD_5 limit, Maximum, this is a previously calculated maximum BOD_5 limit. Under the BPJ Source(s) Oil and Grease (O&G) section, O&G Flow, MGD, is entered in the indicated cell.

(*8) TOC Flow, MGD - Under the BPJ Source(s) or Flow based Guidelines section, TOC Flow, MGD is entered in the indicated cell.

(*9) Conversion factor used in conjunction with flow (MGD) for converting mg/L to lbs per day, 8.34 lbs/gallon. Mg/L is assumed to be equivalent to ppm.

(*10) Average COD or O&G loading per source indicated on the specified row in lbs/day. Under the mass-based guideline section, this is calculated by multiplying the process factor in column (*2) by the daily production value in column (*6), and the flow to treatment plant fraction in column (*7) if process wastewater is being discharged to a deepwell, POTW, or other non-surface water means. Under BPJ Sources or Flow based Guidelines or the BPJ Source(s) Oil and Grease (O&G) sections, loadings are determined by multiplying the concentration specified in column (*2) by the flow in column (*7) and the conversion factor in column (*9). Total COD limits applicable to the permitted outfall are found on the row labeled, "COD/TOC Total (lbs/day)". Total Oil and Grease loadings are specified on the row labeled, "O&G Total (lbs/day)".

(*11) Maximum COD or O&G loading. Similar to column (*10). See description for column (*10).

(*12) Average TOC loading. Similar to column (*10). See description for column (*10).

(*13) Maximum TOC loading. Similar to column (*10). See description for column (*10).

Table 6

Table 6 includes calculations for the heavy metals, Total Chromium, Total Copper, Total Lead, Total Nickel, Total Zinc, Total Cyanide, Total Mercury, Total Residual Chlorine (TRC), and Amenable Cyanide utilizing BAT, NSPS, or BPJ as indicated.

(*1) Subcategory and/or Source- This specifies the applicable guideline subpart, subcategory, or BPJ source. When site-specific OCPSF metal limits are being calculated, the categorical source will be displayed: process wastewater, miscellaneous and utility wastewater, and non-ocpsf wastewater.

(*2) Average (parameter) guideline factor (lbs/1000 lbs daily production), or BPJ concentration (mg/L). Parameter is the indicated metal, cyanide, or TRC. BPJ concentrations for TRC are usually 0.9 mg/L,

average, from the Inorganic Chemicals Development Document (Phase I) pg. 183, EPA 440/1-82/007, associated with chlor-alkali production.

(*3) Maximum (parameter) guideline factor (lbs/1000 lbs daily production), BPJ concentration (mg/L). Parameter is the indicated metal, cyanide, or TRC. BPJ concentrations for TRC are usually 1.5 mg/L, maximum, from the Inorganic Chemicals Development Document (Phase I) pg. 183, EPA 440/1-82/007, associated with chlor-alkali production.

(*4) Same as (*2).

(*5) Same as (*3).

(*6) Production in 1000 lbs/day- Applicable to mass based effluent guidelines, these values indicate the amount of production in 1000 lbs/day.

(*7) Flow to Treatment Plant Fraction- If a facility with mass-based guidelines is discharging a portion of their wastewater to a deepwell, POTW, or other source that is not the receiving water(s), the remaining fraction discharged to the surface receiving water(s) is placed in this column for mass-based limit calculation.

(*8) Parameter flow in MGD- This flow is associated with the parameter specified in columns (*2) and (*3) and is used in determining flow based loadings.

(*9) Parameter flow in MGD- This flow is associated with the parameter specified in columns (*4) and (*5) and is used in determining flow based loadings.

(*10) Average guideline subcategory/subpart or source quantity allowance in lbs/day for specified parameter. For concentration-based guidelines/BPJ, this is determined by multiplying the concentration specified in column (*2) times the flow specified in column (*8) times the conversion factor 8.34. For mass-based guidelines the guideline process factor in column (*2) is multiplied times the daily production value specified in column (*6) and the flow to treatment plant fraction in column (*7) if process wastewater is being discharged to a deepwell, POTW, or other non-surface water means.

(*11) Maximum guideline subcategory/subpart or source quantity allowance in lbs/day for specified parameter. For concentration-based guidelines/BPJ, this is determined by multiplying the concentration specified in column (*3) times the flow specified in column (*8) times the conversion factor 8.34. For mass-based guidelines the guideline process factor in column (*3) is multiplied times the daily production value specified in column (*6) and the flow to treatment plant fraction in column (*7) if process wastewater is being discharged to a deepwell, POTW, or other non-surface water means.

(*12) Similar to column (*10). See description for (*10).

(*13) Similar to column (*11). See description for (*11).

Table 7

Table 7 calculates effluent limitations for parameters under the Fertilizer Effluent Guidelines (40 CFR 418, Subparts B, C, D, and E) utilizing BAT or NSPS as indicated. In the absence of applicable guidelines, BPJ

loadings may be calculated. The non-conventional parameters are Ammonia Nitrogen, Organic Nitrogen, and Nitrate Nitrogen.

(*1) Subcategory or Nitrogen Source:- This specifies the guideline subcategory or source. The listed processes are from 40 CFR 418 Subparts, B, C, D, and E, BAT and NSPS. BPJ allocations for Ammonia Nitrogen, Organic Nitrogen, and Nitrate Nitrogen are determined under "BPJ Non-GL Sources:". This includes "BPJ Production Based:", "BPJ Stat. Based:" (BPJ Statistically Based), and "BPJ Flow Based".

(*2) Average subcategory guideline process factors for the specified parameter, Ammonia Nitrogen or Nitrate Nitrogen as indicated. Guideline process factors are in terms of lbs of parameter per 1000 lbs of daily production. These are located beneath the label, "Avg lbs/1000". Under "BPJ Non-GL Sources", the allowance is specified in units dependent on category. Units: Production based BPJ uses lbs/1000 lbs of product produced, statistically based BPJ utilizes the mean production in lbs/day of product, and flow based BPJ uses mg/L. A common flow based BPJ ammonia allocation, cooling tower blowdown, typically receives a 20 mg/L average allocation for Ammonia Nitrogen based on similarly permitted facilities. Anti-backsliding or poor documentation in the previously issued permit may preclude the usage of the above mentioned BPJ allocations.

(*3) Maximum subcategory guideline process factors for the specified parameter, Ammonia Nitrogen or Nitrate Nitrogen as indicated. Guideline process factors are in terms of lbs of parameter per 1000 lbs of daily production. These are located beneath the label, "Max lbs/1000". Under "BPJ Non-GL Sources", the allowance is specified in units dependent on category. Units: Production based BPJ uses lbs/1000 lbs of product produced, statistically based BPJ utilizes the standard deviation of production in lbs/day of product, and flow based BPJ uses mg/L. A common flow based BPJ ammonia allocation, cooling tower blowdown, typically receives a 50 mg/L maximum allocation for Ammonia Nitrogen based on similarly permitted facilities. Anti-backsliding or poor documentation in the previously issued permit may preclude the usage of the above mentioned BPJ allocations.

(*4) Average subcategory guideline process factor. Same as (*2), except the parameter is Organic Nitrogen.

(*5) Maximum subcategory guideline process factor. Same as (*3), except the parameter specified is Organic Nitrogen.

(*6) Daily production in 1000/lbs per day- This is applicable to Fertilizer Guideline subparts, production based shipping loss allowances, and truck and car cleaning allowances for granulated urea.

(*7) Flow to Treatment Plant Fraction/Ammonia/Nitrate Flow, MGD- If a facility with mass-based guidelines is discharging a portion of their wastewater to a deepwell, POTW, or other source that is not the receiving water(s), the remaining fraction discharged to the surface receiving water(s) is placed in this column for mass-based limit calculation. Under BPJ Flow Based:, the BPJ Ammonia Nitrogen or Nitrate Nitrogen (as appropriate) flow is entered in MGD.

(*8) Organic Nitrogen Flow, MGD- Under BPJ Flow Based:, the BPJ Organic Nitrogen flow is entered in MGD.

(*9) Average guideline subcategory/subpart or BPJ source quantity allowance in lbs/day for specified parameter. For the fertilizer guideline subcategories the process factor in column (*2) is multiplied times the daily production value specified in column (*6) and the flow to treatment plant fraction in column (*7) if process wastewater is being discharged to a deepwell, POTW, or other non-surface

water means. Under "BPJ Production Based", calculations are similar to the guideline calculations. Under "BPJ Stat. Based", the daily average statistical shipping losses are calculated using the following formula:
Variables:
Mean: specified in column (*2)
Standard Deviation (std. dev.): specified in column (*3)
Z(95th) = 1.65
Formula:
Average = (Mean + Z(95th) * std. dev.)
Statistical and production based shipping losses will not be calculated concurrently.

Non-guideline, BPJ Ammonia and Nitrate Nitrogen flow based loadings are calculated under the row labeled "BPJ Flow Based:". The BPJ concentration in column (*2) is multiplied by the flow in column (*7) and the density correction factor of 8.34 yielding an average ammonia nitrogen loading in column (*9). Based on similarly permitted facilities, 20 mg/L of Ammonia Nitrogen is typically allocated for cooling tower blowdown in areas near ammonia production. Anti-backsliding or limits placed in a previous permit may preclude the usage of this BPJ allocation or require a different allocation.

Totalized values are indicated on the rows labeled, "Process Total", "BPJ Source Total", and "Grand Total". The value indicated on the row labeled "Grand Total" is the average limit for the parameter specified.

(*10) Maximum guideline subcategory/subpart or BPJ source quantity allowance in lbs/day for specified parameter. For the fertilizer guideline subcategories the process factor in column (*3) is multiplied times the daily production value specified in column (*6) and the flow to treatment plant fraction in column (*7) if process wastewater is being discharged to a deepwell, POTW, or other non-surface water means. Under "BPJ Production Based", calculations are similar to the guideline calculations. Under "BPJ Stat. Based", the daily maximum statistical shipping losses are calculated using the following formula:
Variables:
Mean: specified in column (*4)
Standard Deviation (std. dev.): specified in column (*5)
Z(99th) = 2.33
Formula:
Maximum = (Mean + Z(99th) * std. dev.)

Non-guideline, BPJ Ammonia and Nitrate Nitrogen flow based loadings are calculated under the row labeled "BPJ Flow Based:". The BPJ concentration in column (*3) is multiplied by the flow in column (*7) and the density correction factor of 8.34 yielding a maximum ammonia or nitrate nitrogen loading in column (*10). Based on similarly permitted facilities, 50 mg/L of Ammonia Nitrogen is typically allocated for cooling tower blowdown in areas near ammonia production. Anti-backsliding or limits placed in a previous permit may preclude the usage of this BPJ allocation or require a different allocation.

Similar to column (*9), statistical and production based shipping losses will not be calculated concurrently. Totalized values are indicated on the rows labeled, "Process Total", "BPJ Source Total", and "Grand Total". The value indicated on the row labeled "Grand Total" is the maximum limit for the parameter specified.

(*11) Average guideline subcategory/subpart or source quantity allowance in lbs/day for Organic Nitrogen. Similar to column (*9). See description for column (*9).

(*12) Maximum guideline subcategory/subpart or source quantity allowance in lbs/day for Organic Nitrogen. Similar to Column (*10). See description for column (*10).

Table 8

Table 8 is a calculation summary table for Conventional, Non-Conventional, and Toxic limits. If there is one consolidated OCPSF metal bearing waste stream per metal and this is the only metal source, then the guideline concentrations in columns (*2) (Daily Average) and (*3) (Daily Maximum) are multiplied times the flow in column (*4) times the conversion factor of 8.34 to yield daily average and daily maximum guideline loadings in lbs/day in columns (*5) and (*6), respectively.

(*1) Parameter- The parameters are organized into three groups, Conventional, Non-Conventional, and Metals and Cyanide.

(*2) Average guideline/BPJ value- Guideline or BPJ value in terms of concentration, mg/L. If there are multiple sources/allocations for the listed metals/cyanide, these values will not be indicated in this column. Single or consolidated metal/cyanide bearing waste streams (OCPSF only) will have values indicated in this column. Values will not be indicated for the conventional and non-conventional pollutants listed.

(*3) Maximum guideline/BPJ value- Guideline or BPJ value in terms of concentration, mg/L. If there are multiple sources/allocations for the listed metals/cyanide, these values will not be indicated in this column. Single or consolidated metal/cyanide bearing waste streams (OCPSF only) will have values indicated in this column. Values will not be indicated for the conventional and non-conventional pollutants listed.

(*4) Process flow in MGD- Similar to columns (*2) and (*3), this column will be left blank unless there is one consolidated metal/cyanide bearing waste stream.

(*5) Average Guideline/BPJ effluent limitation in lbs/day. Except for the metal/cyanide situation discussed in column (*2), these values are calculated in other tables and summarized in this column.

(*6) Maximum Guideline/BPJ effluent limitation in lbs/day. Similar to column (*5).

(*7) Average Tech Old in lbs/day- This column is utilized when an anti-backsliding concern (CWA 402(o), 40 CFR 122.44.l, LAC 33.IX.2707.L) is present. This would be indicated by significantly higher limits (=10% or greater) calculated under guidelines than those previously established in the previous permit on a BPJ basis (now achievable technology, if the permittee is meeting the limits) before guideline issuance. If the previously issued permit (as applicable) contains limits for the parameter of concern and an anti-backsliding concern is present, the limits from the previously issued permit are placed in this column in lbs/day.

(*8) Maximum Tech Old in lbs/day- Similar to (*7).

(*9) Antiback, 0=no scr., 1=OldvsGL, 2=Old+GL- Anti-Backsliding screening switch. The default is set under section (*1) in Table 1. If a screen is conducted, a "1" will appear in this column. The more stringent permit limits will appear in columns (*10) and (*11). If the screen indicates that the previously issued permit limit utilizing BPJ-Technology is more stringent and an increase in production

has occurred, the technology based limits can be recalculated by running the spreadsheet a second time using guidelines for the increase only. This will be indicated by a "2" in this column. The recalculated guideline limitations in columns (*4) and (*5) are subsequently added to the values in columns (*7) and (*8) yielding technology-based effluent limitations in columns (*10) and (*11). The values in this column can be changed on a row-by-row basis for site-specific screening situations.

(*10) Average technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (*5). When anti-backsliding screening is used, see discussion for column (*9).

(*11) Maximum technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (*6). When anti-backsliding screening is used, see discussion for column (*9).

(*12) Average technology based effluent limit in mg/L- A concentration limit can be calculated using the specified concentration flow from section (*1) in Table 1 and the mass limitation calculated under column (*10). The formula is as follows:

$$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} * 8.34}$$

(*13) Maximum technology based effluent limit in mg/L- Similar to column (*11), a concentration limit can be calculated using the specified concentration flow from section (*1) in Table 1 and the mass limitation calculated under column (*11). The formula is as follows:

$$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} * 8.34}$$

Table 9

Table 9 calculates the organic toxic technology effluent limitations based on BAT/NSPS established in the OCPSF guidelines, Subpart I or J as indicated. The column designations are very similar to those used for the summary table for Conventional pollutants, Non-Conventional pollutants, and Metals and Cyanide.

(*1) Parameter. The parameters are organized into three groups, Volatile Compounds, Acid Compounds, and Base/Neutral Compounds.

(*2) Average guideline value (BAT/NSPS) in terms of concentration in mg/L.

(*3) Maximum guideline value (BAT/NSPS) in terms of concentration in mg/L.

(*4) OCPSF process flow in MGD.

(*5) Average guideline limit in lbs/day- Calculated by multiplying the guideline concentration in column (*2) times the flow in column (*4) times the conversion factor of 8.34.

(*6) Maximum guideline limit in lbs/day- Calculated by multiplying the guideline concentration in column (*3) times the flow in column (*4) times the conversion factor of 8.34. Similar to column (*5).

(*7) Average Tech Old in lbs/day- This column is utilized when an anti-backsliding concern (CWA 402(o), 40 CFR 122.44.l, LAC 33.IX.2707.L) is present. This would be indicated by significantly higher limits (≈10% or greater) calculated under guidelines than those previously established in the previous permit on a BPJ basis (now achievable technology, if the permittee is meeting the limits) before

guideline issuance. If the previously issued permit (as applicable) contains limits for the parameter of concern and an anti-backsliding concern is present, the limits from the previously issued permit are placed in this column in lbs/day.

(*8) Maximum Tech Old in lbs/day- Similar to (*7).

(*9) Antiback, 0=no scr., 1=OldvsGL, 2=Old+GL- Anti-Backsliding screening switch. The default is set under section (*1) in Table 1. If a screen is conducted, a "1" will appear in this column. The more stringent permit limits will appear in columns (*10) and (*11). If the screen indicates that the previously issued permit limit utilizing BPJ-Technology is more stringent and an increase in production has occurred, the technology based limits can be recalculated by running the spreadsheet a second time using guidelines for the increase only. This will be indicated by a "2" in this column. The recalculated guideline limitations in columns (*4) and (*5) are subsequently added to the values in columns (*7) and (*8) yielding technology-based effluent limitations in columns (*10) and (*11). The values in this column can be changed on a row-by-row basis for site-specific screening situations.

(*10) Average technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (*5). When anti-backsliding screening is used, see discussion for column (*9).

(*11) Maximum technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (*6). When anti-backsliding screening is used, see discussion for column (*9).

(*12) Daily Average technology based effluent limit in mg/L- A concentration limit can be calculated using the specified concentration flow from section (*1) in Table 1 and the mass limitation calculated under column (*10). The formula is as follows:

$$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} * 8.34}$$

(*13) Daily Maximum technology based effluent limit in mg/L- Similar to column (*11), a concentration limit can be calculated using the specified concentration flow from section (*1) in Table 1 and the mass limitation calculated under column (*11). The formula is as follows:

$$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} * 8.34}$$

Table 10

Table 10 calculates the organic toxic technology effluent limitations based on BAT or NSPS (as indicated) established in the Pesticide Chemicals Guidelines, Subpart A, Table 4 (point sources that use end-of-pipe biological treatment) or Subpart B, Table 5 (point sources that do not use end-of-pipe biological treatment).

(*1) Parameter- The parameters are organized into three groups, Volatile Compounds, Acid Compounds, and Base/Neutral Compounds.

(*2) Average guideline value (BAT/NSPS) in terms of concentration in mg/L.

(*3) Maximum guideline value (BAT/NSPS) in terms of concentration in mg/L.

(*4) Pesticide process flow in MGD.

(*5) Average guideline limit in lbs/day- Calculated by multiplying the guideline concentration in column (*2) times the flow in column (*4) times the conversion factor of 8.34.

(*6) Maximum guideline limit in lbs/day- Calculated by multiplying the guideline concentration in column (*3) times the flow in column (*4) times the conversion factor of 8.34. Similar to column (*5).

(*7) Average Tech Old in lbs/day- This column is utilized when an anti-backsliding concern (CWA 402(o), 40 CFR 122.44.l, LAC 33.IX.2707.L) is present. This would be indicated by significantly higher limits (≈10% or greater) calculated under guidelines than those previously established in the previous permit on a BPJ basis (now achievable technology, if the permittee is meeting the limits) before guideline issuance. If the previously issued permit (as applicable) contains limits for the parameter of concern and an anti-backsliding concern is present, the limits from the previously issued permit are placed in this column in lbs/day.

(*8) Maximum Tech Old in lbs/day- Similar to (*7).

(*9) Antiback, 0=no scr., 1=OldvsGL, 2=Old+GL- The default is set under section (*1) in Table 1. If a screen is conducted, a "1" will appear in this column. The more stringent permit limits will appear in columns (*10) and (*11). If the screen indicates that the previously issued permit limit utilizing BPJ is more stringent and an increase in production has occurred, the technology based limits can be recalculated by running the spreadsheet a second time using guidelines for the increase only. This will be indicated by a "2" in this column. The recalculated guideline limitations in columns (*4) and (*5) are subsequently added to the values in columns (*7) and (*8) yielding technology-based effluent limitations in columns (*10) and (*11). The values in this column can be changed on a row-by-row basis for site-specific screening situations.

(*10) Average technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (*5). When anti-backsliding screening is used, see discussion for column (*9).

(*11) Maximum technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (*6). When anti-backsliding screening is used, see discussion for column (*9).

(*12) Average technology based effluent limit in mg/L- A concentration limit can be calculated using the specified concentration flow from section (*1) in Table 1 and the mass limitation calculated under column (*10). The formula is as follows:

$$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} * 8.34}$$

(*13) Daily Maximum technology based effluent limit in mg/L- Similar to column (*11), a concentration limit can be calculated using the specified concentration flow from section (*1) in Table 1 and the mass limitation calculated under column (*11). The formula is as follows:

$$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} * 8.34}$$

Table 11

Table 11 calculates limitations for pesticide parameters specified in 40 CFR 455, Subpart A, Table 2 (BAT), or Table 3 (NSPS). BPT limitations for organic pesticide chemicals from 40 CFR 455.22 may also be included in this table.

(*1) Pesticide Parameter 455, Subpart A, Table 2- A pesticide from guideline Table 2 or 3 (as indicated) will be listed. Organic Pesticide Chemicals may be listed under this section as well.

(*2) Average guideline factor (BAT/NSPS) in terms of lb per 1000 lbs of pesticide produced daily.

(*3) Maximum guideline factor (BAT/NSPS) in terms of lb per 1000 lbs of pesticide produced daily.

(*4) Adjusted Production in 1000 lbs per day. The average daily production value is adjusted for the fraction of flow to the treatment plant and surface waters if a portion of the wastewater is being discharged to a deepwell or other non-surface water source. If there is no deepwell, then this number represents the full production value.

(*5) Average guideline limit in lbs/day- Calculated by multiplying the guideline factor in column (*2) times the adjusted production in column (*4).

(*6) Maximum guideline limit in lbs/day- Calculated by multiplying the guideline factor in column (*3) times the adjusted production in column (*4).

(*7) Average Tech Old in lbs/day- This column is utilized when an anti-backsliding concern (CWA 402(o), 40 CFR 122.44.l, LAC 33.IX.2707.L) is present. This would be indicated by significantly higher limits (≈10% or greater) calculated under guidelines than those previously established in the previous permit on a BPJ basis (now achievable technology, if the permittee is meeting the limits) before guideline issuance. If the previously issued permit (as applicable) contains limits for the parameter of concern and an anti-backsliding concern is present, the limits from the previously issued permit are placed in this column in lbs/day.

(*8) Maximum Tech Old in lbs/day- Similar to (*7).

(*9) Antiback, 0=no scr., 1=OldvsGL, 2=Old+GL- The default is set under section (*1) in Table 1. If a screen is conducted, a "1" will appear in this column. The more stringent permit limits will appear in columns (*10) and (*11). If the screen indicates that the previously issued permit limit utilizing BPJ is more stringent and an increase in production has occurred, the technology based limits can be recalculated by running the spreadsheet a second time using guidelines for the increase only. This will be indicated by a "2" in this column. The recalculated guideline limitations in columns (*4) and (*5) are subsequently added to the values in columns (*7) and (*8) yielding technology-based effluent limitations in columns (*10) and (*11). The values in this column can be changed on a row-by-row basis for site-specific screening situations.

(*10) Average technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (*5). When anti-backsliding screening is used, see discussion for column (*9).

(*11) Maximum technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (*6). When anti-backsliding screening is used, see discussion for column (*9).

(*12) Average technology based effluent limit in mg/L- A concentration limit can be calculated using the specified concentration flow from section (*1) in Table 1 and the mass limitation calculated under column (*10). The formula is as follows:

$$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} * 8.34}$$

(*13) Daily Maximum technology based effluent limit in mg/L- Similar to column (*11), a concentration limit can be calculated using the specified concentration flow from section (*1) in Table 1 and the mass limitation calculated under column (*11). The formula is as follows:

$$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} * 8.34}$$

Table 12

Table 12 combines the organic toxics guideline calculations for 40 CFR 414, OCPSF Guidelines, Subparts I and J, and 40 CFR 455, Pesticide Chemicals Guidelines, Subpart A, Tables 4 and 5. This table is used when a facility's outfall is regulated under both the OCPSF and Pesticide Guidelines.

(*1) Parameter- The parameters are organized into three groups, Volatile Compounds, Acid Compounds, and Base/Neutral Compounds. The parameters listed cover the toxics listed in the OCPSF and Pesticide Guidelines.

OCPSF toxics calculation section:

(*2) Average OCPSF guideline value (BAT/NSPS) in terms of concentration in mg/L.

(*3) Maximum OCPSF guideline value (BAT/NSPS) in terms of concentration in mg/L.

(*4) OCPSF process flow in MGD. If a parameter is regulated by the OCPSF guidelines, but not the pesticide guidelines, and evidence suggests that the pesticide process may be contributing to the loading of that parameter, then the pesticide process flow may be added to the OCPSF flow per BPJ for that particular parameter.

(*5) Average OCPSF guideline limit in lbs/day- Calculated by multiplying the guideline concentration in column (*2) times the flow in column (*4) times the conversion factor of 8.34.

(*6) Maximum OCPSF guideline limit in lbs/day- Calculated by multiplying the guideline concentration in column (*3) times the flow in column (*4) times the conversion factor of 8.34. Similar to column (*5).

Pesticide toxics calculation section:

(*7) Average Pesticide guideline value (BAT/NSPS) in terms of concentration in mg/L.

(*8) Maximum Pesticide guideline value (BAT/NSPS) in terms of concentration in mg/L.

(*9) Pesticide process flow in MGD. If a parameter is regulated by the pesticide guidelines, but not the OCPSF guidelines, and evidence suggests that the OCPSF process may be contributing to the loading of that parameter, then the OCPSF process flow may be added to the pesticide flow per BPJ for that particular parameter.

(*10) Average Pesticide guideline limit in lbs/day- Calculated by multiplying the guideline concentration in column (*2) times the flow in column (*4) times the conversion factor of 8.34.

(*11) Maximum Pesticide guideline limit in lbs/day- Calculated by multiplying the guideline concentration in column (*3) times the flow in column (*4) times the conversion factor of 8.34. Similar to column (*5).

(*12) Average guideline total in lbs/day- Summary column for the toxics averages calculated under the OCPSF guidelines and the pesticide guidelines. Column (*5) is summed with column (*10).

(*13) Maximum guideline total in lbs/day- Summary column for the toxics maximums calculated under the OCPSF guidelines and the pesticide guidelines. Column (*6) is summed with column (*11).

Table 13

Table 13 calculates limitations for pesticide parameters specified in 40 CFR 455, Subpart A, Table 2 (BAT), or Table 3 (NSPS) as indicated. BPT limitations for organic pesticide chemicals from 40 CFR 455.22 may also be included in this table.

(*1) Pesticide Parameter 455, Subpart A, Table 2- A pesticide from Table 2 or 3 (as indicated) will be listed. Organic Pesticide Chemicals may be listed under this section as well.

(*2) Average guideline factor (BAT/NSPS) in terms of lb per 1000 lbs of pesticide produced daily.

(*3) Maximum guideline factor (BAT/NSPS) in terms of lb per 1000 lbs of pesticide produced daily.

(*4) Production in 1000 lbs per day- Average daily production value in 1000 lbs/day.

(*5) Flow to Treatment Plant Fraction- If a facility with mass-based guidelines is discharging a portion of their wastewater to a deepwell, POTW, or other source that is not the receiving water(s), the fraction discharged to the surface receiving water(s) is placed in this column for mass-based limit calculation.

(*6) Average guideline limit in lbs/day- Calculated by multiplying the guideline factor in column (*2) times the production in column (*4) times the fraction in column (*5), if applicable.

(*7) Maximum guideline limit in lbs/day- Calculated by multiplying the guideline factor in column (*3) times the production in column (*4) times the fraction in column (*5), if applicable.

Table 14

Table 14 is an Anti-Backsliding calculation table for organic and pesticide toxic limitations when a facility's outfall is regulated under both OCPSF and Pesticide Guidelines for a permitted outfall. Permitted loadings and concentrations are also summarized on this table.

(*1) Parameter- Parameter name

(*2) Average Tech Calc limit in lbs/day- Outfall guideline/BPJ loading in lbs/day.

(*3) Maximum Tech Calc limit in lbs/day- Outfall guideline/BPJ loading in lbs/day.

(*4) Average Tech Old in lbs/day- This column is utilized when an anti-backsliding concern (40 CFR 122.44.l, LAC 33.IX.2707.L) is present. This would be indicated by significantly higher limits (≈10% or greater) calculated under guidelines than those previously established in the previous permit on a BPJ basis (now achievable technology, if the permittee is meeting the limits), before guideline issuance. If the previously issued permit (as applicable) contains limits for the parameter of concern and an anti-backsliding concern is present, the limits from the previously issued permit are placed in this column in lbs/day.

(*5) Maximum Tech Old in lbs/day- Similar to (*4).

(*6) Antiback, 0=no scr., 1=OldvsGL, 2=Old+GL- The default is set under section (*1) in Table 1. If a screen is conducted, a "1" will appear in this column. The more stringent permit limits will appear in columns (*7) and (*8). If the screen indicates that the previously issued permit limit utilizing BPJ is more stringent and an increase in production has occurred, the technology based limits can be recalculated by running the spreadsheet a second time using guidelines for the increase only. This will be indicated by a "2" in this column. The recalculated guideline limitations in columns (*2) and (*3) are subsequently added to the values in columns (*4) and (*5) yielding technology-based effluent limitations in columns (*7) and (*8). The values in this column can be changed on a row-by-row basis for site-specific screening situations.

(*7) Average technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (*2). When anti-backsliding screening is used, see discussion for column (*6).

(*8) Maximum technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (*3). When anti-backsliding screening is used, see discussion for column (*6).

(*9) Average technology based effluent limit in mg/L- A concentration limit can be calculated using the specified concentration flow from section (*1) in Table 1 and the mass limitation calculated under column (*7). The formula is as follows:

$$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} * 8.34}$$

(*10) Daily Maximum technology based effluent limit in mg/L- Similar to column (*9), a concentration limit can be calculated using the specified concentration flow from section (*1) in Table 1 and the mass limitation calculated under column (*8). The formula is as follows:

$$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} * 8.34}$$

Appendix B

Total Loading for Outfalls 001, 002, 003

Input variables:

Permittee	Honeywell International, Inc.
Permit Number=	LA0006181, AI2082

Outfalls to be summed:	Outfall#:	Flow, MGD:
Outfall	001	0.890224
Outfall	002	2.20898
Outfall	003	0.03

Outfall list	001, 002, 003

Page Numbering/Labeling

Appendix	Appendix B-1
Page Numbers 1=y, 0=n	1
Input Page # 1=y, 0=n	1

Documentation:

This is a simple spreadsheet used for summing the total loadings from up to three outfalls for the purpose of water quality screening. Technology limits and/or end-of-pipe measurements are added for a total facility loading. Calculation columns are indicated with an asterisk and number enclosed by paretheses. For example, (*1) or (*9). The term "N/A" will appear in column headers if there are less than 3 outfalls being summed.

Explanation of column calculations:

(*1) Parameter being screened
(*2) Monthly average technology or effluent value in mass units of lbs/day.
(*3) Daily maximum technology or effluent value in mass units of lbs/day.
(*4) Similar to column (*2). See explanation for column (*2).
(*5) Similar to column (*3). See explanation for column (*3).
(*6) Similar to column (*2). See explanation for column (*2).
(*7) Similar to column (*3). See explanation for column (*3).
(*8) Sum of daily averages in columns (*2), (*4), and (*6).
(*9) Sum of daily maximums in columns (*3), (*5), and (*7).

Appendix B-1 Page 2

Total Loading for Outfalls 001, 002, 003

LA0006181, AI2082

(*1) Toxic Parameters	(*2) Outfall 001 (Avg) lbs/day	(*3) Outfall 001 (Max) lbs/day	(*4) Outfall 002 (Avg) lbs/day	(*5) Outfall 002 (Max) lbs/day	(*6) Outfall 003 (Avg) lbs/day	(*7) Outfall 003 (Max) lbs/day	(*8) Total Loading (Avg) lbs/day	(*9) Total Loading (Max) lbs/day
NONCONVENTIONAL								
Total Phenols (4AAP)							---	---
3-Chlorophenol							---	---
4-Chlorophenol							---	---
2,3-Dichlorophenol							---	---
2,5-Dichlorophenol							---	---
2,6-Dichlorophenol							---	---
3,4-Dichlorophenol							---	---
2,4-Dichlorophenocy-acetic acid (2,4-D)							---	---
2-(2,4,5-Trichlorophen-oxy) propionic acid (2,4,5-TP, Silvex)							---	---
METALS AND CYANIDE								
Total Arsenic							---	---
Total Cadmium							---	---
Chromium III	5.593321	13.95811	1.1	3.6			6.693321	17.558108
Chromium VI	5.593321	13.95811	1.1	3.6			6.693321	17.558108
Total Copper							---	---
Total Lead							---	---
Total Mercury							---	---
Total Nickel			6.3	21.1			6.3	21.100000
Total Zinc			23.2	76			23.2	76.000000
Total Cyanide							---	---
DIOXIN								
2,3,7,8 TCDD; dioxin							---	---
VOLATILE COMPOUNDS								
Benzene	0.287225	0.67523					0.287225	0.675230
Bromoform							---	---
Bromodichloromethane							---	---
Carbon Tetrachloride	0.715542	1.914831					0.715542	1.914831
Chloroform	0.559332	1.637684					0.559332	1.637684
Dibromochloromethane							---	---
1,2-Dichloroethane(EDC)	0.907025	2.892402					0.907025	2.892402
1,1-Dichloroethylene	0.110859	0.302342					0.110859	0.302342
1,3-Dichloropropylene	0.987649	4.000988					0.987649	4.000988
Ethylbenzene	0.715542	1.914831					0.715542	1.914831
Methyl Chloride	0.554293	1.486513					0.554293	1.486513
Methylene Chloride	0.181405	0.856635					0.181405	0.856635
1,1,2,2-Tetrachloro-ethane							---	---

Total Loading for Outfalls 001, 002, 003

LA0006181, AI2082

(*1) Toxic Parameters	(*2) Outfall 001 (Avg) lbs/day	(*3) Outfall 001 (Max) lbs/day	(*4) Outfall 002 (Avg) lbs/day	(*5) Outfall 002 (Max) lbs/day	(*6) Outfall 003 (Avg) lbs/day	(*7) Outfall 003 (Max) lbs/day	(*8) Total Loading (Avg) lbs/day	(*9) Total Loading (Max) lbs/day
VOLATILE COMPOUNDS (cont'd)								
Tetrachloroethylene	0.262029	0.826401					0.262029	0.826401
Toluene	0.141093	0.372888					0.141093	0.372888
1,1,1-Trichloroethane	0.110859	0.297303					0.110859	0.297303
1,1,2-Trichloroethane	0.161249	0.639957					0.161249	0.639957
Trichloroethylene	0.131015	0.347693					0.131015	0.347693
Vinyl Chloride	0.488786	0.866713					0.488786	0.866713
ACID COMPOUNDS								
2-Chlorophenol							---	---
2,4-Dichlorophenol							---	---
BASE NEUTRAL COMPOUNDS								
Benzidine							---	---
Hexachlorobenzene	0.987649	4.000988					0.987649	4.000988
Hexachlorabutadiene	0.715542	1.914831					0.715542	1.914831
PESTICIDES								
Aldrin							---	---
Hexachlorocyclohexane (gamma BHC, Lindane)							---	---
Chlordane							---	---
4,4'-DDT							---	---
4,4'-DDE							---	---
4,4'-DDD							---	---
Dieldrin							---	---
Endosulfan							---	---
Endrin							---	---
Heptachlor							---	---

Toxaphene							---	---
Other Parameters:								
Fecal Colif. (col/100ml)							---	---
Chlorine							---	---
Ammonia							---	---
Chlorides							---	---
Fluoride	166.29	332.58	1689	3589			1855.29	3921.580000
TDS							---	---
Goldbook Values:								
							---	---
							---	---
							---	---

wqsmodn.wk4 Date: 03/24 Appendix B-2 Page 1
Developer: Bruce Fielding Time: 11:17 AM
Software: Lotus 4.0 LA0006181, AI2082
Revision date: 10/29/01

Water Quality Screen for Honeywell International, Inc.

Input variables:

Receiving Water Characteristics:

Receiving Water Name=	Mississippi River
Critical flow (Qr) cfs=	141955
Harm. mean/avg tidal cfs=	366748
Drinking Water=1 HHNPCR=2	1
Marine, 1=y, 0=n	
Rec. Water Hardness=	153.3
Rec. Water TSS=	32
Fisch/Specific=1,Stream=0	
Diffuser Ratio=	

Effluent Characteristics:

Permittee=	Honeywell International, Inc.
Permit Number=	LA0006181, AI2082
Facility flow (Qef),MGD=	3.129
Outfall Number =	001, 002, 003
Eff. data, 2=lbs/day	2
MQL, 2=lbs/day	1
Effluent Hardness=	N/A
Effluent TSS=	N/A
WQBL ind. 0=y, 1=n	
Acute/Chr. ratio 0=n, 1=y	1
Aquatic,acute only1=y,0=n	
Page Numbering/Labeling	
Appendix	Appendix B-2
Page Numbers 1=y, 0=n	1
Input Page # 1=y, 0=n	1

Fischer/Site Specific inputs:

Pipe=1,Canal=2,Specific=3	
Pipe width, feet	
ZID plume dist., feet	
MZ plume dist., feet	
HHnc plume dist., feet	
HHc plume dist., feet	

Fischer/site specific dilutions:

F/specific ZID Dilution =	---
F/specific MZ Dilution =	---
F/specific HHnc Dilution=	---
F/specific HHc Dilution=	---

Dilution:

ZID Fs =	0.033333
MZ Fs =	0.333333
Critical Qr (MGD)=	91745.52
Harm. Mean (MGD)=	237029.2
ZID Dilution =	0.001022
MZ Dilution =	0.000102
HHnc Dilution=	0.000034
HHc Dilution=	0.000013
ZID Upstream =	977.3678
MZ Upstream =	9773.678
MZhhnc Upstream=	29321.03
MZhhc Upstream=	75752.39
ZID Hardness=	---
MZ Hardness=	---
ZID TSS=	---
MZ TSS=	---

Multipliers:

WLAa --> LTAa	0.32
WLAc --> LTAc	0.53
LTA a,c-->WQBL avg	1.31
LTA a,c-->WQBL max	3.11
LTA h --> WQBL max	2.38
WQBL-limit/report	2.13
WLA Fraction	1
WQBL Fraction	1

Conversions:

ug/L-->lbs/day Qef	0.026096
ug/L-->lbs/day Qeo	0
ug/L-->lbs/day Qr	1183.905
lbs/day-->ug/L Qeo	38.32025
lbs/day-->ug/L Qef	38.32025
diss-->tot 1=y0=n	1
Cu diss->tot1=y0=n	1
cfs-->MGD	0.6463

Receiving Stream:

Default Hardness=	25
Default TSS=	10
99 Crit., 1=y, 0=n	1

Toxicity Dilution Series:

Biomonitoring dilution:	0.001023
Dilution Series Factor:	0.75

	Percent Effluent
Dilution No. 1	0.136%
Dilution No. 2	0.1023%
Dilution No. 3	0.0767%
Dilution No. 4	0.0575%
Dilution No. 5	0.0432%

Partition Coefficients; Dissolved-->Total

METALS	FW
Total Arsenic	2.223578
Total Cadmium	3.549121
Chromium III	5.282524
Chromium VI	1
Total Copper	3.56078
Total Lead	6.6
Total Mercury	2.785159
Total Nickel	3.174756
Total Zinc	4.535534

Aquatic Life, Dissolved Metal Criteria, ug/L

METALS	ACUTE	CHRONIC
Arsenic	339.8	150
Cadmium	50.52151	1.413642
Chromium III	778.6175	252.5755
Chromium VI	15.712	10.582
Copper	27.55826	17.6964
Lead	102.4952	3.99409
Mercury	1.734	0.012
Nickel	2031.654	225.6315
Zinc	164.3674	150.0924

Site Specific Multiplier Values:

CV =	---
N =	---
WLAa --> LTAa	---
WLAc --> LTAc	---
LTA a,c-->WQBL avg	---
LTA a,c-->WQBL max	---
LTA h --> WQBL max	---

[*1] 2/21/00 Report, Sta. no. 58010319 (Plaquemine)

(*1) Toxic Parameters	(*2) Instream Conc. ug/L	(*3) CuEffluent /Tech (Avg) lbs/day	(*4) Effluent /Tech (Max) lbs/day	(*5) MQL ug/L	(*6) Effluent 95th % 1=No 95% 0=95 %	(*7) estimate Non-Tech lbs/day	(*8) Numerical Criteria Acute FW ug/L	(*9) Chronic FW ug/L	(*10) HHDW ug/L	(*11) HH Carcinogen Indicator "C"
NONCONVENTIONAL										
Total Phenols (4AAP)				5			700	350	5	
3-Chlorophenol				10					0.1	
4-Chlorophenol				10			383	192	0.1	
2,3-Dichlorophenol				10					0.04	
2,5-Dichlorophenol				10					0.5	
2,6-Dichlorophenol				10					0.2	
3,4-Dichlorophenol				10					0.3	
2,4-Dichlorophenocy-acetic acid (2,4-D)				---					100	
2-(2,4,5-Trichlorophen-oxy) propionic acid (2,4,5-TP, Silvex)									10	
METALS AND CYANIDE										
Total Arsenic				10			755.5719	333.5367	111.1789	
Total Cadmium				1			179.307	5.017186	35.49121	
Chromium III	6.693321	17.55811		10	1		4113.065	1334.236	264.1262	
Chromium VI	6.693321	17.55811		10	1		15.712	10.582	50	C
Total Copper				10			98.12891	63.01298	3560.78	
Total Lead				5			676.4682	26.36099	330	
Total Mercury				0.2			4.829466	0.033422	5.570319	
Total Nickel	6.3	21.1		5	1		6450.007	716.325		
Total Zinc	23.2	76		20	1		745.4939	680.749	22677.67	
Total Cyanide				20			45.9	5.2	663.8	
DIOXIN										
2,3,7,8 TCDD; dioxin			1.0E-005						7.1E-007	C
VOLATILE COMPOUNDS										
Benzene	0.287225	0.67523		10	1		2249	1125	1.1	C
Bromoform				10			2930	1465	3.9	C
Bromodichloromethane				10					0.2	C
Carbon Tetrachloride	0.715542	1.914831		10	1		2730	1365	0.22	C
Chloroform	0.559332	1.637684		10	1		2890	1445	5.3	C
Dibromochloromethane				10					0.39	C
1,2-Dichloroethane (EDC)	0.907025	2.892402		10	1		11800	5900	0.36	C
1,1-Dichloroethylene	0.110859	0.302342		10	1		1160	580	0.05	C
1,3-Dichloropropylene	0.987649	4.000988		10	1		606	303	9.86	
Ethylbenzene	0.715542	1.914831		10	1		3200	1600	2390	
Methyl Chloride	0.554293	1.486513		50	1		55000	27500		
Methylene Chloride	0.181405	0.856635		20	1		19300	9650	4.4	C
1,1,2,2-Tetrachloro-ethane				10			932	466	0.16	C

(*1) Toxic Parameters	(*12) WLAa Acute ug/L	(*13) WLAc Chronic ug/L	(*14) WLAh HHDW ug/L	(*15) LTAa Acute ug/L	(*16) LTAc Chronic ug/L	(*17) LTAh HHDW ug/L	(*18) Limiting A,C,HH ug/L	(*19) WQBL Avg 001, ug/L	(*20) WQBL Max 001, ug/L	(*21) WQBL Avg 001, lbs/day	(*22) WQBL Max 001, lbs/day	(*23) Need WQBL? 002,
NONCONVENTIONAL												
Total Phenols (4AAP)	684857.5	3421137	146610.2	219154.4	1813203	146610.2	146610.2	146610.2	348932.2	3825.919	9105.686	no
3-Chlorophenol	---	---	2932.203	---	---	2932.203	2932.203	2932.203	6978.644	76.51837	182.1137	no
4-Chlorophenol	374714.9	1876738	2932.203	119908.8	994671.2	2932.203	2932.203	2932.203	6978.644	76.51837	182.1137	no
2,3-Dichlorophenol	---	---	1172.881	---	---	1172.881	1172.881	1172.881	2791.458	30.60735	72.84549	no
2,5-Dichlorophenol	---	---	14661.02	---	---	14661.02	14661.02	14661.02	34893.22	382.5919	910.5686	no
2,6-Dichlorophenol	---	---	5864.407	---	---	5864.407	5864.407	5864.407	13957.29	153.0367	364.2274	no
3,4-Dichlorophenol	---	---	8796.61	---	---	8796.61	8796.61	8796.61	20935.93	229.5551	546.3412	no
2,4-Dichlorophenocy-acetic acid (2,4-D)	---	---	2932203	---	---	2932203	2932203	2932203	6978644	76518.37	182113.7	no
2-(2,4,5-Trichlorophen-oxy) propionic acid (2,4,5-TP, Silvex)	---	---	293220.3	---	---	293220.3	293220.3	293220.3	697864.4	7651.837	18211.37	no
METALS AND CYANIDE												
Total Arsenic	739227.2	3260214	3259992	236552.7	1727914	3259992	236552.7	309884	735678.9	8086.691	19198.17	no
Total Cadmium	175428.2	49041.38	1040675	56137.01	25991.93	1040675	25991.93	34049.43	80834.9	888.5491	2109.456	no
Chromium III	4024091	1.3E+007	7744717	1287709	6912115	7744717	1287709	1686899	4004775	44021.08	104508.1	no
Chromium VI	15372.12	103435.6	3787670	4919.077	54820.89	3787670	4919.077	6443.991	15298.33	168.1615	399.223	no
Total Copper	96006.16	615931.6	1E+008	30721.97	326443.8	1E+008	30721.97	40245.78	95545.33	1050.248	2493.338	no
Total Lead	661834.7	257670.2	9676271	211787.1	136565.2	9676271	136565.2	178900.4	424717.8	4668.561	11083.38	no
Total Mercury	4724.994	326.6884	163333.1	1511.998	173.1449	163333.1	173.1449	226.8198	538.4806	5.919057	14.05211	no
Total Nickel	6310479	7001847	---	2019353	3710979	---	2019353	2645353	6280189	69032.76	163886.9	no
Total Zinc	729367.3	6654102	6.6E+008	233397.5	3526674	6.6E+008	233397.5	305750.8	725866.3	7978.829	18942.11	no
Total Cyanide	44907.08	50828.33	1.9E+007	14370.27	26939.01	1.9E+007	14370.27	18825.05	44691.53	491.2558	1166.264	no
DIOXIN												
2,3,7,8 TCDD; dioxin	---	---	5.4E-002	---	---	5.4E-002	5.4E-002	5.4E-002	1.3E-001	1.4E-003	3.3E-003	no
VOLATILE COMPOUNDS												
Benzene	2200349	1.1E+007	83328.73	704111.7	5828152	83328.73	83328.73	83328.73	198322.4	2174.535	5175.393	no
Bromoform	2866618	1.4E+007	295438.2	917317.7	7589549	295438.2	295438.2	295438.2	703143	7709.715	18349.12	no
Bromodichloromethane	---	---	15150.68	---	---	15150.68	15150.68	15150.68	36058.61	395.37	940.9805	no
Carbon Tetrachloride	2670944	1.3E+007	16665.75	854702.1	7071491	16665.75	16665.75	16665.75	39664.48	434.907	1035.079	no
Chloroform	2827483	1.4E+007	401493	904794.6	7485937	401493	401493	401493	955553.3	10477.3	24935.98	no
Dibromochloromethane	---	---	29543.82	---	---	29543.82	29543.82	29543.82	70314.3	770.9715	1834.912	no
1,2-Dichloroethane(EDC)	1.2E+007	5.8E+007	27271.22	3694317	3.1E+007	27271.22	27271.22	27271.22	64905.51	711.666	1693.765	no
1,1-Dichloroethylene	1134907	5669313	3787.67	363170.1	3004736	3787.67	3787.67	3787.67	9014.654	98.84249	235.2451	no
1,3-Dichloropropylene	592890.9	2961727	289115.3	189725.1	1569716	289115.3	189725.1	248539.9	590045	6485.861	15397.73	no
Ethylbenzene	3130777	1.6E+007	7E+007	1001849	8288927	7E+007	1001849	1312422	3115749	34248.77	81308.16	no
Methyl Chloride	5.4E+007	2.7E+008	---	1.7E+007	1.4E+008	---	1.7E+007	2.3E+007	5.4E+007	588650.8	1397484	no
Methylene Chloride	1.9E+007	9.4E+007	333314.9	6042400	5E+007	333314.9	333314.9	333314.9	793289.5	8698.14	20701.57	no
1,1,2,2-Tetrachloro-ethane	911838.8	4555000	12120.54	291788.4	2414150	12120.54	12120.54	12120.54	28846.89	316.296	752.7844	no

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)
Toxic	CuEffluent		Effluent	MQL	Effluent 95th %		Numerical Criteria			HH
Parameters	Instream	/Tech	/Tech		1=No 95%	estimate	Acute	Chronic	HHDW	Carcinogen
	Conc.	(Avg)	(Max)		0=95 %	Non-Tech	FW	FW		Indicator
	ug/L	lbs/day	lbs/day	ug/L		lbs/day	ug/L	ug/L	ug/L	"C"
VOLATILE COMPOUNDS (cont'd)										
Tetrachloroethylene		0.262029	0.826401	10	1		1290	645	0.65	C
Toluene		0.141093	0.372888	10	1		1270	635	6100	
1,1,1-Trichloroethane		0.110859	0.297303	10	1		5280	2640	200	
1,1,2-Trichloroethane		0.161249	0.639957	10	1		1800	900	0.56	C
Trichloroethylene		0.131015	0.347693	10	1		3900	1950	2.8	C
Vinyl Chloride		0.488786	0.866713	10	1				1.9	C
ACID COMPOUNDS										
2-Chlorophenol				10			258	129	0.1	
2,4-Dichlorophenol				10			202	101	0.3	
BASE NEUTRAL COMPOUNDS										
Benzidine				50			250	125	0.00008	C
Hexachlorobenzene		0.987649	4.000988	10	1				0.00025	C
Hexachlorabutadiene		0.715542	1.914831	10	1		5.1	1.02	0.09	C
PESTICIDES										
Aldrin				0.05			3		0.00004	C
Hexachlorocyclohexane										
(gamma BHC, Lindane)				0.05			5.3	0.21	0.11	C
Chlordane				0.2			2.4	0.0043	0.00019	C
4,4'-DDT				0.1			1.1	0.001	0.00019	C
4,4'-DDE				0.1			52.5	10.5	0.00019	C
4,4'-DDD				0.1			0.03	0.006	0.00027	C
Dieldrin				0.1			0.2374	0.0557	0.00005	C
Endosulfan				0.1			0.22	0.056	0.47	
Endrin				0.1			0.0864	0.0375	0.26	
Heptachlor				0.05			0.52	0.0038	0.00007	C
Toxaphene				5			0.73	0.0002	0.00024	C
Other Parameters:										
Fecal Colif. (col/100ml)										
Chlorine							19	11		
Ammonia								4000		
Chlorides										
Sulfates										
TDS										
Goldbook Values:										

(*1) Toxic Parameters	(*12) WLAa Acute ug/L	(*13) WLAc Chronic ug/L	(*14) WLAh HHDW ug/L	(*15) LTAa Acute ug/L	(*16) LTAc Chronic ug/L	(*17) LTAh HHDW ug/L	(*18) Limiting A,C,HH ug/L	(*19) WQBL Avg 001, ug/L	(*20) WQBL Max 001, ug/L	(*21) WQBL Avg 001, lbs/day	(*22) WQBL Max 001, lbs/day	(*23) Need WQBL? 002.
Tetrachloroethylene	1262094	6304667	49239.7	403870.2	3341474	49239.7	49239.7	49239.7	117190.5	1284.952	3058.187	no
Toluene	1242527	6206921	1.8E+008	397608.7	3289668	1.8E+008	397608.7	520867.4	1236563	13592.48	32269.17	no
1,1,1-Trichloroethane	5165782	2.6E+007	5864407	1653050	1.4E+007	5864407	1653050	2165496	5140986	56510.48	134158.5	no
1,1,2-Trichloroethane	1761062	8797210	42421.9	563539.9	4662521	42421.9	42421.9	42421.9	100964.1	1107.036	2634.746	no
Trichloroethylene	3815634	1.9E+007	212109.5	1221003	1E+007	212109.5	212109.5	212109.5	504820.6	5535.18	13173.73	no
Vinyl Chloride	---	---	143931.4	---	---	143931.4	143931.4	143931.4	342556.8	3756.015	8939.315	no
ACID COMPOUNDS												
2-Chlorophenol	252418.9	1260933	2932.203	80774.05	668294.7	2932.203	2932.203	2932.203	6978.644	76.51837	182.1137	no
2,4-Dichlorophenol	197630.3	987242.5	8796.61	63241.7	523238.5	8796.61	8796.61	8796.61	20935.93	229.5551	546.3412	no
BASE NEUTRAL COMPOUNDS												
Benzidine	244592	1221835	6.060271	78269.42	647572.4	6.060271	6.060271	6.060271	14.42345	0.158148	0.376392	no
Hexachlorobenzene	---	---	18.93835	---	---	18.93835	18.93835	18.93835	45.07327	0.494212	1.176226	yes
Hexachlorabutadiene	4989.676	9970.172	6817.805	1596.696	5284.191	6817.805	1596.696	2091.672	4965.725	54.58398	129.5849	no
PESTICIDES												
Aldrin	2935.103	---	3.030136	939.2331	---	3.030136	3.030136	3.030136	7.211723	0.079074	0.188196	no
Hexachlorocyclohexane (gamma BHC, Lindane)	5185.349	2052.682	8332.873	1659.312	1087.922	8332.873	1087.922	1425.177	3383.436	37.19123	88.29368	no
Chlordane	2348.083	42.03112	14.39314	751.3865	22.27649	14.39314	14.39314	14.39314	34.25568	0.375601	0.893932	no
4,4'-DDT	1076.205	9.774678	14.39314	344.3855	5.180579	14.39314	5.180579	6.786559	16.1116	0.177101	0.420446	no
4,4'-DDE	51364.31	102634.1	14.39314	16436.58	54396.08	14.39314	14.39314	14.39314	34.25568	0.375601	0.893932	no
4,4'-DDD	29.35103	58.64807	20.45342	9.392331	31.08348	20.45342	9.392331	12.30395	29.21015	0.321082	0.762264	no
Dieldrin	232.2645	544.4496	3.78767	74.32465	288.5583	3.78767	3.78767	3.78767	9.014654	0.098842	0.235245	no
Endosulfan	215.2409	547.382	13781.36	68.87709	290.1124	13781.36	68.87709	90.22899	214.2078	2.354603	5.589936	no
Endrin	84.53098	366.5504	7623.729	27.04991	194.2717	7623.729	27.04991	35.43539	84.12523	0.924717	2.19532	no
Heptachlor	508.7513	37.14378	5.302737	162.8004	19.6862	5.302737	5.302737	5.302737	12.62051	0.138379	0.329343	no
Toxaphene	714.2085	1.954936	18.18081	228.5467	1.036116	18.18081	1.036116	1.357312	3.22232	0.03542	0.084089	no
Other Parameters:												
Fecal Colif. (col/100ml)	---	---	---	---	---	---	---	---	---	---	---	no
Chlorine	18588.99	107521.5	---	5948.476	56986.37	---	5948.476	7792.504	18499.76	203.3521	482.7672	no
Ammonia	---	3.9E+007	---	---	3.9E+007	---	3.9E+007	3.9E+007	7.8E+007	1336612	3173178	no
Chlorides	---	---	---	---	---	---	---	---	---	---	---	no
Sulfates	---	---	---	---	---	---	---	---	---	---	---	no
TDS	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---			---	--	no
	---	---	---	---	---	---	---	---	---	---	---	no

APPENDIX B-3 LA0006181, AI No. 2082

Documentation and Explanation of Water Quality Screen
and Associated Lotus Spreadsheet

Each reference column is marked by a set of parentheses enclosing a number and asterisk, for example (*1) or (*19). These columns represent inputs, existing data sets, calculation points, and results for determining Water Quality Based Limits for an effluent of concern. The following represents a summary of information used in calculating the water quality screen:

Receiving Water Characteristics:

Receiving Water: Mississippi River
Critical Flow, Qrc (cfs): 141,955
Harmonic Mean Flow, Qrh (cfs): 366,784
Segment No.: 070301
Receiving Stream Hardness (mg/L): 153.3
Receiving Stream TSS (mg/L): 32
MZ Stream Factor, Fs: 0.3333
Plume distance, Pf: N/A

Effluent Characteristics:

Company: Honeywell International
Facility flow, Qe (MGD): 3.129
Effluent Hardness: N/A
Effluent TSS: N/A
Pipe/canal width, Pw: N/A
Permit Number: LA0006181

Variable Definition:
Qrc, critical flow of receiving stream, cfs
Qrh, harmonic mean flow of the receiving stream, cfs
Pf = Allowable plume distance in feet, specified in LAC 33.IX.1115.D
Pw = Pipe width or canal width in feet
Qe, total facility flow , MGD
Fs, stream factor from LAC.IX.33.11 (1 for harmonic mean flow)
Cu, ambient concentration, ug/L
Cr, numerical criteria from LAC.IX.1113, Table 1
WLA, wasteload allocation
LTA, long term average calculations
WQBL, effluent water quality based limit
ZID, Zone of Initial Dilution in % effluent
MZ, Mixing Zone in % effluent

Formulas used in aquatic life water quality screen (dilution type WLA):

Streams:

$$\text{Dilution Factor} = \frac{Qe}{(Qrc \times 0.6463 \times Fs + Qe)}$$

$$\text{WLA a,c,h} = \frac{\text{Cr}}{\text{Dilution Factor}} - \frac{(\text{Fs} \times \text{Qrc} \times 0.6463 \times \text{Cu})}{\text{Qe}}$$

Static water bodies (in the absence of a site specific dilution):

Discharge from a pipe:

$$\text{Critical Dilution} = \frac{(2.8)\ \text{Pw}\ \pi^{1/2}}{\text{Pf}}$$

$$\text{WLA} = \frac{(\text{Cr-Cu})\ \text{Pf}}{(2.8)\ \text{Pw}\ \pi^{1/2}}$$

Discharge from a canal:

$$\text{Critical Dilution} = \frac{(2.38)(\text{Pw}^{1/2})}{(\text{Pf})^{1/2}}$$

$$\text{WLA} = \frac{(\text{Cr-Cu})\ \text{Pf}^{1/2}}{2.38\ \text{Pw}^{1/2}}$$

Formulas used in human health water quality screen, human health non-carcinogens (dilution type WLA):

Streams:

$$\text{Dilution Factor} = \frac{\text{Qe}}{(\text{Qrc} \times 0.6463 + \text{Qe})}$$

$$\text{WLA a,c,h} = \frac{\text{Cr}}{\text{Dilution Factor}} - \frac{(\text{Qrc} \times 0.6463 \times \text{Cu})}{\text{Qe}}$$

Formulas used in human health water quality screen, human health carcinogens (dilution type WLA):

$$\text{Dilution Factor} = \frac{\text{Qe}}{(\text{Qrh} \times 0.6463 + \text{Qe})}$$

$$\text{WLA a,c,h} = \frac{\text{Cr}}{\text{Dilution Factor}} - \frac{(\text{Qrh} \times 0.6463 \times \text{Cu})}{\text{Qe}}$$

Static water bodies in the absence of a site specific dilution (human health carcinogens and human health non-carcinogens):

Discharge from a pipe:

$$\text{Critical Dilution} = \frac{(2.8)\ \text{Pw}\ \pi^{1/2}}{\text{Pf}}$$

$$\text{WLA} = \frac{(\text{Cr-Cu})\ \text{Pf}^{*}}{(2.8)\ \text{Pw}\ \pi^{1/2}}$$

Discharge from a canal:

$$\text{Critical Dilution} = \frac{(2.38)(\text{Pw}^{1/2})}{(\text{Pf})^{1/2}}$$

$$\text{WLA} = \frac{(\text{Cr-Cu})\ \text{Pf}^{1/2*}}{2.38\ \text{Pw}^{1/2}}$$

* Pf is set equal to the mixing zone distance specified in LAC 33:IX.1115 for the static water body type, i.e., lake, estuary, Gulf of Mexico, etc.

If a site specific dilution is used, WLA are calculated by subtracting Cu from Cr and dividing by the site specific dilution for human health and aquatic life criteria.

$$WLA = \frac{(Cr-Cu)}{\text{site specific dilution}}$$

Longterm Average Calculations:
LTAa = WLAa X 0.32
LTAc = WLAc X 0.53
LTAh = WLAh

WQBL Calculations:
Select most limiting LTA to calculate daily max and monthly avg WQBL

If aquatic life LTA is more limiting:
Daily Maximum = Min(LTAa, LTAc) X 3.11
Monthly Average = Min(LTAc, LTAc) X 1.31

If human health LTA is more limiting:
Daily Maximum = LTAh X 2.38
Monthly Average = LTAh

Mass Balance Formulas:

mass (lbs/day): (ug/L) X 1/1000 X (flow, MGD) X 8.34 = lbs/day

$$\text{concentration(ug/L)}: \frac{\text{lbs/day}}{\text{(flow, MGD) X 8.34 X 1/1000}} = \text{ug/L}$$

The following is an explanation of the references in the spreadsheet.

(*1) Parameter being screened.
(*2) Instream concentration for the parameter being screened in ug/L. In the absence of accurate supporting data, the instream concentration is assumed to be zero (0).
(*3) Monthly average effluent or technolgy value in concentration units of ug/L or mass units of lbs/day. Units determined on a case-by-case basis as appropriate to the particular situation.
(*4) Daily maximum technology value in concentration units of ug/L or mass units of lbs/day. Units determined on a case-by-case basis as appropriate to the particular situation.
(*5) Minimum analytical Quantification Levels (MQL's). Established in a letter dated January 27, 1994 from Wren Stenger of EPA Region 6 to Kilren Vidrine of LDEQ and from the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". The applicant must test for the parameter at a level at least as sensitive as the specified MQL. If this is not done, the MQL becomes the application value for screening purposes if the pollutant is suspected to be present on-site and/or in the waste stream. Units are in ug/l or lbs/day depending on the units of the effluent data.
(*6) States whether effluent data is based on 95th percentile estimation. A "1" indicates that a 95th percentile approximation is being used, a "0" indicates that no 95th percentile approximation is being used.
(*7) 95th percentile approximation multiplier (2.13). The constant, 2.13, was established in memorandum of understanding dated October 8, 1991 from Jack Ferguson of Region 6 to Jesse Chang of LDEQ and

included in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". This value is screened against effluent Water Quality Based Limits established in columns (*18) - (*21). Units are in ug/l or lbs/day depending on the units of the measured effluent data.

(*8) LAC 33.IX.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, freshwater (FW) or marine water (MW) (whichever is applicable) aquatic life protection, acute criteria. Units are specified. Some metals are hardness dependent. The hardness of the receiving stream shall generally be used, however a flow weighted hardness may be determined in site-specific situations. Dissolved metals are converted to Total metals using partition coefficients in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Similar to hardness, the TSS of the receiving stream shall generally be used, however, a flow weighted TSS may be determined in site-specific situations.

Hardness Dependent Criteria:

Metal	Formula
Cadmium	$e^{(1.1280[\ln(\text{hardness})] - 1.6774)}$
Chromium III	$e^{(0.8190[\ln(\text{hardness})] + 3.6880)}$
Copper	$e^{(0.9422[\ln(\text{hardness})] - 1.3884)}$
Lead	$e^{(1.2730[\ln(\text{hardness})] - 1.4600)}$
Nickel	$e^{(0.8460[\ln(\text{hardness})] + 3.3612)}$
Zinc	$e^{(0.8473[\ln(\text{hardness})] + 0.8604)}$

Dissolved to Total Metal Multipliers for Freshwater Streams (TSS dependent):

Metal	Multiplier
Arsenic	$1 + 0.48 \times TSS^{-0.73} \times TSS$
Cadmium	$1 + 4.00 \times TSS^{-1.13} \times TSS$
Chromium III	$1 + 3.36 \times TSS^{-0.93} \times TSS$
Copper	$1 + 1.04 \times TSS^{-0.74} \times TSS$
Lead	$1 + 2.80 \times TSS^{-0.80} \times TSS$
Mercury	$1 + 2.90 \times TSS^{-1.14} \times TSS$
Nickel	$1 + 0.49 \times TSS^{-0.57} \times TSS$
Zinc	$1 + 1.25 \times TSS^{-0.70} \times TSS$

Dissolved to Total Metal Multipliers for Marine Environments (TSS dependent):

Metal	Multiplier
Copper	$1 + (10^{4.86} \times TSS^{-0.72} \times TSS) \times 10^{-6}$
Lead	$1 + (10^{6.06} \times TSS^{-0.85} \times TSS) \times 10^{-6}$
Zinc	$1 + (10^{5.36} \times TSS^{-0.52} \times TSS) \times 10^{-6}$

If a metal does not have multiplier listed above, then the dissolved to total metal multiplier shall be 1.

(*9) LAC 33.IX.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, freshwater (FW) or marine water (MW) (whichever is applicable) aquatic life protection, chronic criteria. Units are specified. Some metals are hardness dependent. The hardness of the receiving stream shall generally be used, however a flow weighted hardness may be determined in site-specific situations. Dissolved metals are converted to Total metals using partition coefficients in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards".

Similar to hardness, the TSS of the receiving stream shall generally be used, however, a flow weighted TSS may be determined in site-specific situations.
Hardness dependent criteria:

Metal	Formula
Cadmium	$e^{(0.7852[\ln(\text{hardness})] - 3.4900)}$
Chromium III	$e^{(0.8473[\ln(\text{hardness})] + 0.7614)}$
Copper	$e^{(0.8545[\ln(\text{hardness})] - 1.3860)}$
Lead	$e^{(1.2730[\ln(\text{hardness})] - 4.7050)}$
Nickel	$e^{(0.8460[\ln(\text{hardness})] + 1.1645)}$
Zinc	$e^{(0.8473[\ln(\text{hardness})] + 0.7614)}$

Dissolved to total metal multiplier formulas are the same as (*8), acute numerical criteria for aquatic life protection.

(*10) LAC 33.IX.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, human health protection, drinking water supply (HHDW), non-drinking water supply criteria (HHNDW), or human health non-primary contact recreation (HHNPCR) (whichever is applicable). A DEQ and EPA approved Use Attainability Analysis is required before HHNPCR is used, e.g., Monte Sano Bayou. Units are specified.

(*11) C if screened and carcinogenic. If a parameter is being screened and is carcinogenic a "C" will appear in this column.

(*12) Wasteload Allocation for acute aquatic criteria (WLAa). Dilution type WLAa is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the acute aquatic numerical criteria for that parameter. Units are in ug/L. Dilution WLAa formulas for streams:

$$WLAa = (Cr/\text{Dilution Factor}) - \frac{(Fs \times Qrc \times 0.6463 \times Cu)}{Qe}$$

Dilution WLAa formulas for static water bodies:
WLAa = (Cr-Cu)/Dilution Factor)
Cr represents aquatic acute numerical criteria from column (*8).
If Cu data is unavailable or inadequate, assume Cu=0.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

(*13) Wasteload Allocation for chronic aquatic criteria (WLAc). Dilution type WLAc is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the chronic aquatic numerical criteria for that parameter. Units are in ug/L. Dilution WLAc formula:

$$WLAc = (Cr/\text{Dilution Factor}) - \frac{(Fs \times Qrc \times 0.6463 \times Cu)}{Qe}$$

Dilution WLAc formulas for static water bodies:
WLAc = (Cr-Cu)/Dilution Factor)
Cr represents aquatic chronic numerical criteria from column (*9).
If Cu data is unavailable or inadequate, assume Cu=0.
If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

(*14) Wasteload Allocation for human health criteria (WLAh). Dilution type WLAh is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the human health numerical criteria for that parameter. Units are in ug/L. Dilution WLAh formula:

$$WLAh = (Cr/Dilution\ Factor) - \frac{(Fs \times Qrc,Qrh \times 0.6463 \times Cu)}{Qe}$$

Dilution WLAh formulas for static water bodies:
WLAh = (Cr-Cu)/Dilution Factor)
Cr represents human health numerical criteria from column (*10).
If Cu data is unavailable or inadequate, assume Cu=0.
If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

(*15) Long Term Average for aquatic numerical criteria (LTAa). WLAa numbers are multiplied by a multiplier specified in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 0.32. WLAa X 0.32 = LTAa.
If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

(*16) Long Term Average for chronic numerical criteria (LTAc). WLAc numbers are multiplied by a multiplier specified in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 0.53. WLAc X 0.53 = LTAc.
If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

(*17) Long Term Average for human health numerical criteria (LTAh). WLAh numbers are multiplied by a multiplier specified in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 1. WLAc X 1 = LTAh.
If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

(*18) Limiting Acute, Chronic or Human Health LTA's. The most limiting LTA is placed in this column. Units are consistent with the WLA calculation. If standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then the type of limit, Aquatic or Human Health (HH), is indicated.

(*19) End of pipe Water Quality Based Limit (WQBL) monthly average in terms of concentration, ug/L. If aquatic life criteria was the most limiting LTA then the limiting LTA is multiplied by 1.31 to determine the average WQBL ($LTA_{limiting\ aquatic}$ X 1.31 = $WQBL_{monthly\ average}$). If human health criteria was the most limiting criteria then LTAh = $WQBL_{monthly\ average}$. If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then either the human health criteria or the chronic aquatic life criteria shall appear in this column depending on which is more limiting.

(*20) End of pipe Water Quality Based Limit (WQBL) daily maxium in terms of concentration, ug/L. If aquatic life criteria was the most limiting LTA then the limiting LTA is multiplied by 3.11 to determine the daily maximum WQBL ($LTA_{limiting\ aquatic}$ X 3.11 = $WQBL_{daily\ max}$). If human health criteria was the most limiting criteria then LTAh is multiplied by 2.38 to determine the daily maximum WQBL ($LTA_{limiting\ aquatic}$ X 2.38 = $WQBL_{daily\ max}$). If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then either the human health criteria or the acute aquatic life criteria shall appear in this column depending on which is more limiting.

(*21) End of pipe Water Quality Based Limit (WQBL) monthly average in terms of mass, lbs/day. The mass limit is determined by using the mass balance equations above. Monthly average WQBL, ug/l/1000 X facility flow, MGD X 8.34 = monthly average WQBL, lbs/day.

(*22) End of pipe Water Quality Based Limit (WQBL) monthly average in terms of mass, lbs/day. Mass limit is determined by using the mass balance equations above. Daily maximum WQBL, ug/l/1000 X facility flow, MGD X 8.34 = daily maximum WQBL, lbs/day.

(*23) Indicates whether the screened effluent value(s) need water quality based limits for the parameter of concern. A "yes" indicates that a water quality based limit is needed in the permit; a "no" indicates the reverse.

Appendix C

MEMORANDUM

TO: Jennifer Sheppard

FROM: Will Barlett

DATE: March 12, 2007

RE: Stream Flow and Water Quality Characteristics for the Mississippi River, receiving water for Honeywell International Inc., Geismar Plant (Permit No. LA0006181, AI: 2082)

Determinations of water quality characteristics for Outfalls 001 and 002 were taken from ambient monitoring station #319 on the Mississippi River at Plaquemine ferry landing, in St. Francisville, LA, midstream.

The following results were obtained:

Average hardness	=	153.3 mg/l
15^{th} percentile TSS	=	32 mg/l

The 7Q10 at this location has been determined to be 141,955 cfs and the harmonic mean has been determined to be 366,748 cfs.

If you have additional questions or comments, please contact me at 2-3468.

WGB:wb

Appendix D

BIOMONITORING FREQUENCY RECOMMENDATION AND RATIONALE FOR ADDITIONAL REQUIREMENTS

Permit Number: **LA0006181**
Facility Name: **Honeywell International Inc./Geismar Plant**
Previous Critical Biomonitoring Dilution: **0.0486% (10:1 ACR)**
Proposed Critical Biomonitoring Dilution: **0.10% (10:1 ACR)**
Date of Review: **10/31/07** Name of Reviewer: **Laura Keen**

Recommended Frequency by Species:

***Pimephales promelas* (Fathead minnow): Once / Year[1]**
***Daphnia pulex* (water flea): Once / Year[1]**

Recommended Dilution Series: **0.04%, 0.06%, 0.08%, 0.10%, and 0.14%**

Number of Tests Performed during previous 5 years by Species:

***Pimephales promelas* (Fathead minnow): 5**
***Daphnia pulex* (water flea): 5**
***Daphnia magna* (water flea): N/A – Testing of species was not required**
***Ceriodaphnia dubia* (water flea): N/A – Testing of species was not required**

Number of Failed Tests during previous 5 years by Species:

***Pimephales promelas* (Fathead minnow): No failures on file during the past 5 years**
***Daphnia pulex* (water flea): No failures on file during the past 5 years**
***Daphnia magna* (water flea): N/A – Testing of species was not required**
***Ceriodaphnia dubia* (water flea): N/A – Testing of species was not required**

Failed Test Dates during previous 5 years by Species:

***Pimephales promelas* (Fathead minnow): No failures on file during the past 5 years**
***Daphnia pulex* (water flea): No failures on file during the past 5 years**
***Daphnia magna* (water flea): N/A – Testing of species was not required**
***Ceriodaphnia dubia* (water flea): N/A – Testing of species was not required**

Previous TRE Activities: **N/A – No previous TRE Activities**

[1] An acute critical biomonitoring dilution of less than 1% shall have an established biomonitoring frequency of once per year

Additional Requirements (including WET Limits) Rationale / Comments Concerning Permitting:

The Honeywell International Inc./Geismar Plant owns and operates a hydrogen fluoride, fluorocarbon, and fluoropolymer facility in Geismar, Ascension Parish, Louisiana. LPDES Permit LA0006181, effective July 12, 2002, contained freshwater acute biomonitoring as an effluent characteristic of combined Outfalls 001, 002, and 003 for *Daphnia pulex* and *Pimephales promelas*. The effluent series consisted of 0.0205%, 0.0273%, 0.0364%, 0.0486%, and 0.065% concentrations, with the critical biomonitoring dilution being defined as the 0.0486% effluent concentration. The testing was to be performed once per year for the *Daphnia pulex* and the *Pimephales promelas*. Data on file indicate that the permittee has complied with the biomonitoring requirements contained in LA0006181 with no toxicity failures during the last five years.

It is recommended that freshwater acute biomonitoring continue to be an effluent characteristic of combined Outfalls 001 (discharge of 0.890224 mgd of treated process wastewater and process area stormwater from the MulitProducts Plant, the Aclon Plant, and the HFC -125/245fa Plants; process scrubber and thermal oxidizer scrubber wastewater; utility wastewaters including cooling tower blowdown, boiler blowdown, softener regeneration water, reject/backwash/regen water; and other miscellaneous non-process wastewater discharges), 002 (discharge of 2.208980 mgd of treated process wastewater and process area stormwater associated with the hydrogen fluoride (HF) facility; utility wastewaters including cooling tower blowdown; wastewater from Fluorgypsum slurry pump tanks which includes flow from the HF facility furnaces and emergency scrubbers; and other miscellaneous and other non-process wastewaters which discharge to the Mississippi River), and 003 (discharge of 0.03000 mgd of underflow associated with the raw river water intake clarification system which discharges to the Mississippi River) in LA0006181. The effluent dilution series shall be 0.04%, 0.06%, 0.08%, 0.10%, and 0.14% with the 0.10% concentration being defined as the critical biomonitoring dilution (the 10:1 Acute-to-Chronic ratio has been implemented). Since the proposed critical dilution is less than 1% (10:1 ACR), the biomonitoring frequency shall be once per year for *Daphnia pulex* and *Pimephales promelas*.

This recommendation is in accordance with the LDEQ/OES Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, EPA Region 6 Post-Third Round Whole Effluent Toxicity Testing Frequencies (Revised June 30, 2000), and the Best Professional Judgement (BPJ) of the reviewer.

Appendix E

APPENDIX E

OUTFALL 001 - the continuous discharge of treated process wastewater, process area stormwater, and general use wastewater from the MultiProducts Plant, the Aclon Plant, the HFC -125/245fa Plants; process scrubber and thermal oxidizer scrubber wastewater; utility wastewaters including cooling tower blowdown, boiler blowdown, softener regeneration water, reject/backwash/regen water; and other miscellaneous non-process wastewater discharges.

Outfall description was taken from Section II (Page 7 of 42) of the SCC-2 LPDES permit renewal application addendum submittal, dated October 31, 2007.

WASTE STREAMS	MAXIMUM 30 DAY FLOW (MGD)	DOCUMENT LOCATION
PROCESS WASTEWATER		
MultiProducts Plant Process WW	0.0252	Section II (Page 7 of 42) and the Flow Balance Diagram of the SCC-2 LPDES permit renewal application addendum submittal, dated October 31, 2007.
Aclon Plant Process WW	0.145	Section II (Page 7 of 42) and the Flow Balance Diagram of the SCC-2 LPDES permit renewal application addendum submittal, dated October 31, 2007.
HFC-125/245fa Plant Process WW	0.027	Section II (Page 7 of 42) and the Flow Balance Diagram of the SCC-2 LPDES permit renewal application addendum submittal, dated October 31, 2007.
Potentially Contaminated SW	0.018	Section II (Page 7 of 42) and the Flow Balance Diagram of the SCC-2 LPDES permit renewal application addendum submittal, dated October 31, 2007.
Process Scrubbers	0.305	Section II (Page 7 of 42) and the Flow Balance Diagram of the SCC-2 LPDES permit renewal application addendum submittal, dated October 31, 2007.
Thermal Oxidizer Scrubbers	0.084	Section II (Page 7 of 42) and the Flow Balance Diagram of the SCC-2 LPDES permit renewal application addendum submittal, dated October 31, 2007.
Total Process Flow	**0.6042**	

WASTE STREAMS	MAXIMUM 30 DAY FLOW (MGD)	DOCUMENT LOCATION
MISCELLANEOUS WASTEWATER		
Misc Ancillary Non-Process WW	0.022	Section II (Page 7 of 42) and the Flow Balance Diagram of the SCC-2 LPDES permit renewal application addendum submittal, dated October 31, 2007.
Total Miscellaneous Flow	**0.022**	
UTILITY WASTEWATER		
MultiProducts Cooling Towers	0.00771	Section II (Page 7 of 42) and the Flow Balance Diagram of the SCC-2 LPDES permit renewal application addendum submittal, dated October 31, 2007.
Boiler Blowdown	0.152	Section II (Page 7 of 42) and the Flow Balance Diagram of the SCC-2 LPDES permit renewal application addendum submittal, dated October 31, 2007.
MultiProducts Plant Softener Regen	0.001614	Section II (Page 7 of 42) and the Flow Balance Diagram of the SCC-2 LPDES permit renewal application addendum submittal, dated October 31, 2007.
Alc/HFC -125/245fa Rej/BW/Regen	0.075	Section II (Page 7 of 42) and the Flow Balance Diagram of the SCC-2 LPDES permit renewal application addendum submittal, dated October 31, 2007.
Aclon Plant Cooling Towers	0.0022	Section II (Page 7 of 42) and the Flow Balance Diagram of the SCC-2 LPDES permit renewal application addendum submittal, dated October 31, 2007.
HFC -125/245fa Cooling Towers	0.0255	Section II (Page 7 of 42) and the Flow Balance Diagram of the SCC-2 LPDES permit renewal application addendum submittal, dated October 31, 2007.
Total Utility Flow	**0.264024**	
Total OCPSF + BPJ Flow	**0.890224**	

Outfall 001 Continued:

WASTE STREAMS	FLOW (MGD)	DOCUMENT LOCATION
Maximum 30 Day Flow (used for water quality calculations)	0.890224	Section II (Page 7 of 42) and the Flow Balance Diagram of the SCC-2 LPDES permit renewal application addendum submittal, dated October 31, 2007.

The Max 30 Day Flow for this outfall is 0.890224 MGD, as reported in the October 31, 2007 application addendum submittal. The maximum 30 day value has been added to the maximum 30 days values for Outfalls 002 and 003 for water quality screening purposes.

Applicable Guidelines:

Guideline	Reference
Organic Chemicals, Plastics, and Synthetic Fibers Process Flow - 0.6042 MGD	40 CFR 414 Subparts D, G, and J

Site Specific Considerations:
None

OUTFALL 002 - the continuous discharge of treated process wastewater, process area stormwater, and general use wastewater associated with the hydrogen fluoride (HF) facility; process scrubber wastewater; cooling tower blowdown; boiler blowdown; equipment seal water; wastewater from Flurogypsum slurry pump tanks which includes flow from the HF facility furnaces and emergency scrubbers; stormwater from the fluorogypsum stacking areas; and miscellaneous and other non-process wastewaters which discharge to the Mississippi River.

Outfall description was taken from Section II (Pages 7 and 8 of 42) of the SCC-2 LPDES permit renewal application addendum submittal, dated October 31, 2007.

WASTE STREAMS	**MAXIMUM 30 DAY FLOW (MGD)**	**DOCUMENT LOCATION**
PROCESS WASTEWATER		
HF Plant General Plant Usage & Process Area SW	0.15525	Section II (Page 7 of 42) and the Flow Balance Diagram of the SCC-2 LPDES permit renewal application addendum submittal, dated October 31, 2007.
HF Plant Process Scrubbers	0.22525	Section II (Page 7 of 42) and the Flow Balance Diagram of the SCC-2 LPDES permit renewal application addendum submittal, dated October 31, 2007.
HF Plant Boiler Blowdown	0.162380	Section II (Page 7 of 42) and the Flow Balance Diagram of the SCC-2 LPDES permit renewal application addendum submittal, dated October 31, 2007.
HF Plant Equipment Seals	0.28756	Section II (Page 7 of 42) and the Flow Balance Diagram of the SCC-2 LPDES permit renewal application addendum submittal, dated October 31, 2007.
Total Process Flow	**0.83044**	

WASTE STREAMS	MAXIMUM 30 DAY FLOW (MGD)	DOCUMENT LOCATION
UTILITY WASTEWATER		
HF Plant Cooling Towers	0.09358	Section II (Page 7 of 42) and the Flow Balance Diagram of the SCC-2 LPDES permit renewal application addendum submittal, dated October 31, 2007.
Flurogypsum Slurry Pump Tanks (includes flow from HF furnaces and emergency scrubbers)	0.444	Section II (Page 8 of 42) and the Flow Balance Diagram of the SCC-2 LPDES permit renewal application addendum submittal, dated October 31, 2007.
Recycled water for the Fluorogypsum Stacking Facility	-0.167040	Section II (Page 8 of 42) and the Flow Balance Diagram of the SCC-2 LPDES permit renewal application addendum submittal, dated October 31, 2007.
Total Utility Flow	**0.37054**	
STORMWATER RUNOFF		
SW from Flurogypsum Stacking Areas	1.008	Section II (Page 8 of 42) and the Flow Balance Diagram of the SCC-2 LPDES permit renewal application addendum submittal, dated October 31, 2007.
Total Stormwater Flow	**1.008**	
Total Process + BPJ Flow	**2.20898**	

Outfall 002 Continued:

WASTE STREAMS	FLOW (MGD)	DOCUMENT LOCATION
Maximum 30 Day Flow (used for water quality calculations)	2.20898	Section II (Page 7 and 8 of 42) and the Flow Balance Diagram of the SCC-2 LPDES permit renewal application addendum submittal, dated October 31, 2007.

The Max 30 Day Flow for this outfall is 2.20898 MGD, as reported in the October 31, 2007 application addendum submittal. The maximum 30 day value has been added to the maximum 30 days values for Outfalls 001 and 003 for water quality screening purposes.

Applicable Guidelines:

Guideline	Reference
Inorganic Chemicals-	
Hydrochloric Acid Production Subcategory	40 CFR 415
Daily Production - 385,248,000 lbs/year	Subpart H
1055473.976 lbs/day	

Site Specific Considerations:
None

OUTFALL 003 - the continuous discharge of underflow associated with the raw river water intake clarification system which discharges to the Mississippi River.

Outfall description was taken from Section II (Page 8 of 42) of the SCC-2 LPDES permit renewal application addendum submittal, dated October 31, 2007.

WASTE STREAMS	MAXIMUM 30 DAY FLOW (MGD)	DOCUMENT LOCATION
UTILITY WASTEWATER		
Clarifier Underflow	0.030	Section II (Page 8 of 42) of the SCC-2 LPDES permit renewal application addendum submittal, dated October 31, 2007.

The Max 30 Day Flow for this outfall is 0.030 MGD, as reported in the October 31, 2007 application addendum submittal. The maximum 30 day value has been added to the maximum 30 days values for Outfalls 001 and 002 for water quality screening purposes.

Site Specific Considerations:
None

OUTFALL 004 - the intermittent discharge of non-process area stormwater runoff.

Outfall description was taken from Section II (Page 8 of 42) of the SCC-2 LPDES permit renewal application addendum submittal, dated October 31, 2007.

WASTE STREAMS	ESTIMATED FLOW (MGD)	DOCUMENT LOCATION
STORMWATER RUNOFF		
Non-Process Area SW	0.036	Section II (Page 8 of 42) of the SCC-2 LPDES permit renewal application addendum submittal, dated October 31, 2007.

Site Specific Considerations:
None

Outfall 005 - the discharge of treated sanitary wastewater.

Outfall description was taken from Section II (Page 8 of 42) of the SCC-2 LPDES permit renewal application addendum submittal, dated October 31, 2007.

WASTE STREAMS	ESTIMATED FLOW (MGD)	DOCUMENT LOCATION
SANITARY WASTEWATER		
Sanitary WW	0.060	Section II (Page 8 of 42) of the SCC-2 LPDES permit renewal application addendum submittal, dated October 31, 2007.

Site Specific Considerations:
None